NEW APPLICATION

ORIGINAL

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ARIZONA CORPORATION COMMISSION

Arizona Corporation Commission
DOCKETED
MAY 20 2009
DOCKETED BY

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2009 MAY 20 P 2:43
AZ CORP COMMISSION
DOCKET CONTROL

FINANCING APPLICATION

Bellemont Water Company
UTILITY NAME

W-02526A-09-0253

DOCKET NO(S)

You must complete ALL items in the application according to the instructions provided. If you have any questions regarding the application please call (602) 542-4251 for Staff assistance.

IN ORDER TO PROCESS YOUR APPLICATION
PLEASE FORWARD THE ORIGINAL
AND THIRTEEN COPIES OF THE
APPLICATION PLUS
THREE PACKETS OF THE SUPPORTING
DOCUMENTATION TO:

ARIZONA CORPORATION COMMISSION
DOCKET CONTROL CENTER
1200 WEST WASHINGTON STREET
PHOENIX, ARIZONA 85007

May 13, 2009

Bellemont Water Company
PO Box 31176
Flagstaff, AZ 86003

Application for financing matters

The authorized person is Klaudia Ness.

The Bellemont Water Company, Inc. requests the authorization from the Arizona Corporation Commission to borrow $1,750,000 in long-term debt from the Water Infrastructure Finance authority of Arizona. This money will be used for the following project:

To drill a deep well in order to secure a permanent water source. There may be some grants available which will reduce the amount that WIFA actually loans.

The details of this loan can be secured directly from WIFA

We believe that the demand for water in the area is very high. We believe that this will enable Bellemont Water Company to lower the current rates to be competitive with other water sources. The Greater Economic Council has met with us on several occasions wanting to assist us in developing a reliable water source so that they can promote development in the area. We believe that the revenue will cover the cost of servicing the debt.

Bellemont Water Company, Inc.
P.O. Box 31176
Flagstaff, AZ 86003
928-779-5726

May 13, 2009

Re: Financing Application certification of notice to customers

I, Klaudia Ness, do hereby certify that I have notified the customers who I know the addresses of by mail of the scheduled hearing for the emergency rate increase. I have noticed the other customers by posting a notice on the standpipe. The date of the notice was today, May 13, 2009.

Klaudia Ness

Klaudia Ness

Subscribed and sworn to before me, in my presence, this 15th day of May, 2009, a notary public in and for the Coconino County, State of Arizona.

Susan P Lundberg

Signature of Notary Public

OFFICIAL SEAL
SUSAN P. LUNDBERG
Notary Public – State of Arizona
COCONINO COUNTY
My commission expires Aug. 22, 2012

My commission expires 8/22/2012

PUBLIC NOTICE
OF
AN APPLICATION FOR AN ORDER

AUTHORIZING a loan from the Water Infrastructure Finance Authority of Arizona
BY Bellemont Water Company

Bellemont Water Company filed an Application with the Arizona Corporation Commission for an order authorizing Applicant to borrow $1,750,000 from the Water Infrastructure Finance authority of Arizona. The application is available for inspection during regular business hours at the office of the Commission in Phoenix, AZ , and the Company's offices in Flagstaff, AZ.

Intervention in the Commission's proceedings on the application shall be permitted to any person entitled by law to intervene and having a direct substantial interest in this matter. Persons desiring to intervene must file a Motion to Intervene with the Commission which must be served upon applicant and which, at a minimum, shall contain the following information:

1. The name, address and telephone number of the proposed intervener and of any person upon whom service of documents is to be made if different than the intervener.

2. A short statement of the proposed intervener's interest in the proceeding.

3. Whether the proposed intervener desires a formal evidentiary hearing on the application and the reasons for such a hearing.

4. A statement certifying that a copy of the Motion to Intervene has been mailed to Applicant.

The granting of Motions to Intervene shall be governed by A.A.C. R14-3-105, except that all Motions to Intervene must be filed on, or before, the 15th day after this notice.

Arizona Corporation Commission
1200 West Washington Street
Phoenix, AZ 85007

Bellemont Water Company
7350 Hutton Ranch Road
Flagstaff, AZ 86004

HydroSystems Inc.

9831 S. 51st St. Suite F-122 Phoenix, Arizona 85044
Telephone 480-517-9050 Fax 480-517-9049

Principals
Gary G. Small
Roxanne Small

Business Manager
Peggy Olsen

Team HSI
Crystal Ault
Sheila Ehlers
Gretchen Erwin
Jesús Gastélum
Tomas Gonde
Nancy La Mascus
Mario Lluria
Miles McGinnis
Brandon McLean
Marla Mikaelian
Phil Paski
Steve Skutnicki
Chris Weyrauch

April 30, 2009

Klaudia Ness
Bellemont Water Company
P.O. Box 31176
Flagstaff, Arizona 86003

Dear Ms. Ness:

HydroSystems Inc.(HSI) is please to submit a cost estimate and a break down for budgeting your project. The following cost estimate is for the addition of one new deep water supply well in the Bellemont, Arizona area complete with piping, valving and instrumentation. These tasks and estimated cost include the work of the hydrologic and engineering consultants, the well drilling, geophysical and pump contractors plus the permit fees for the various Agencies.

Pre-Design Costs.....$ 75,000
- -Background surface geology
- -Background hydrology
- -Surface geophysics
- -Well siting
- -Report documentation
- -Well site agreement

Design Costs.....$ 170,000
- -Engineering survey
- -System description
- -Engineering Plans & Specification
- -Pipeline design
- -Pumping plant design
- -Well house design
- -Electrical design
- -Instrumentation design
- -Technical Specifications (Well)
- -Well Design
- -Design concept report
- -Permit application development (ADWR, ADEQ)
- -Permit fees
- -Bid document preparation
- -Completion report

Construction Costs.....$ 1,185,000

- -Site preparation
- -Well drilling
- -Well construction
- -Geophysical logging
- -Aquifer testing
- -Water quality sampling
- -Submersible pump
- -Pipeline excavation
- -Pipe, valves & meters
- -Pipe backfill
- -Instrumentation

Start up & Testing Costs.....$ 50,000

- -Start up
- -System tests
- -Operation & Maintenance Manual
- -Permit application development (ADEQ)
- -Permit fees

Sub Total.....$ 1,480,000

Contingency Cost (18%).....$ 266,400

Total Cost.....$ 1,746,400

These costs are for budget purposes only. Much of this work will be described in plans and technical specifications that will be used to obtain contractor bids. These bids will then be used in the development of contracts between Bellemont Water Company and the various contractors and consultants.

If we can be of further assistance, please contact us at 480-517-9050.

Sincerely,

Gary G. Small
President

HydroSystems, Inc.
9831 S. 51st St. Suite E-122 Phoenix, Arizona 85044
Telephone: 480-517-9050 Fax: 480-517-9049

Principals
Gary G. Small
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Team HSI
Crystal Ault
Sheila Ehlers
Gretchen Erwin
Jesús Gastélum
Tomas Goode
Nancy La Mascus
Mario Lluria
Miles McGinnis
Brandon McLean
Maria Mikaelian
Phil Pasko
Steve Skomicki
Chris Weyrauch

March 13, 2009

Klaudia Ness
Bellemont Water Company
P.O. Box 31176
Flagstaff, Arizona 86003

Subject: Water Production Well Design, Construction, and Permitting for Bellemont Water Company

Dear Ms. Ness:

HydroSystems, Inc. (HSI) is pleased to submitted the subsequent task and time estimate for work associated with the drilling and installation of one deep water production well completed to the regional aquifer for the Bellemont Water Company. Although the tasks listed on the table offer guidance according to WIFA requirements, there are many component parts that need to be accomplished for successful completion of this project.

Water development in the Bellemont area presents a formidable challenge consisting of a surface geophysical survey, permitting through the Arizona Department of Water Resources, Arizona Department of Environmental Quality, and U.S. Forest Service, developing technical drilling specifications, construction oversight, and new source sample testing, and documentation. These services will be performed by the combine efforts of hydrogeologists, geophysicists, engineers, and appropriate contractors.

Task and Time Estimate for Bellemont Water Company Water Production Well

Task	Time
Planning, Design, and Specification Submittal	May 15, 2009
Approval to Construct	June 15, 2009
Advertisement for Bids	June 15, 2009
Construction Commencement	July 1, 2009
Construction and Completion	November 1, 2009
Initiate Operation	December 15, 2009

The dates estimated in the proceeding table represent tentative completion dates based on several similar-type projects completed by HSI in the Flagstaff area. Work on this project can begin on April 1, 2009. If you have any questions, please feel free to contact me at 480-517-9050.

Respectfully submitted by,

Gary G. Small, MS., P.G.
President

HydroSystems, Inc

A Company Built on Integrity

HydroSystems, Inc.

2009

Mission Statement: *To become the leader in the field of groundwater recharge and applied hydrogeology in the Southwest*

9831 S. 51st Street, Suite E-122, Phoenix, Arizona 85044

Company Overview

* * *

Our goal is to provide the highest quality service in the groundwater consulting industry by employing highly skilled people who produce high quality work products that are usable and reader friendly.

* * *

HydroSystems, Inc., (HSI) is a Phoenix, Arizona based firm specializing in groundwater recharge and other hydrogeologic applications for use in solving complex water resource and environmental problems. HSI employs highly skilled professionals with water resource and environmental permitting expertise as well as project management skills to ensure timely and cost-effective solutions. HSI's qualifications are unsurpassed in technical expertise, project management, and the development of high quality products.

TECHNICAL EXPERTISE

At HSI, it is imperative to provide consulting services that reflect regulatory limitations for efficient utilization of precious water resources. HSI has strong technical expertise in the fields of hydrology, geology, and water management, and offer a wide range of services, encompassing:

♦ Annual Water Use Reporting Services ♦ Aquifer Characterization ♦ Assured Water Supply ♦ Hydrologic Analysis ♦ Computer Graphics ♦ Environmental Permitting ♦ GIS Mapping ♦ GIS Spatial Analysis & Modeling ♦ Geochemical Modeling ♦ Geophysical Logging Analysis ♦ Groundwater Flow Modeling ♦ Soil Characterization & Analysis ♦ Subsurface Geologic Mapping ♦ Surface Geophysical Analysis ♦ Surface Water Hydrologic Studies ♦ Production & Monitor Well Design ♦ Underground Storage & Recovery Projects ♦ Vadose Zone & Injection Well Design ♦ Wastewater Disposal Options ♦ Water Resources Planning ♦ Water Rights Analysis ♦ Water Quality Sampling ♦ Well Abandonment ♦ Well Drilling ♦ Well Repair & Rehabilitation ♦ Well Site Selections

PROJECT MANAGEMENT EXPERIENCE

The professionals at HSI have successfully completed numerous large and small-scale projects by forming interdisciplinary technical teams challenged to solve complex problems. This style of management results in timely and cost-effective solutions to meet our client's needs.

HIGH QUALITY PRODUCTS

HSI prides itself in producing high quality work products including precise and clear technical writing on complex topics. HSI utilizes computer graphics to enhance the technical analysis and visualization of complex hydrologic conditions. HSI's final products first undergo an in-house quality assurance and quality control review resulting in the highest quality products possible.

Awards

Arizona Consulting Engineers Association 2001 Engineering Excellence given to HSI and Entellus for the Vidler Recharge Facility

Arizona Hydrological Society 2004 Lifetime Achievement Award given to Gary G. Small

Experience Makes the Difference

Collectively, HSI employs professionals with over 100 years of Arizona-based water resource and environmental experience. Since the formation of HSI in 1994, the firm has managed both large and small projects and has earned a reputation for finding innovative solutions for complex problems on a timely basis. HSI is composed of highly motivated and highly trained personnel to help transform your challenges into opportunities. HSI's highly qualified staff members include:

• • •Founder• • •

Mr. Gary G. Small, B.S., M.S., P.G., CEI

Mr. Small is the principal and the founder of the firm, has more than 30 years of Arizona experience working in the groundwater industry. Mr. Small's specialties are in groundwater recharge, well design, well drilling technology, environmental assessments, and environmental permitting. Mr. Small is experienced in cable tool and rotary drilling methods as well as having an extensive background in well construction, well repair and well rehabilitation.

Mr. Small has been actively involved in the development of artificial groundwater recharge projects in Arizona since 1973. Mr. Small is known for his innovative ideas regarding artificial groundwater recharge projects, and most notably for the development of new recharge methods including the use of vadose zone recharge wells, and the application of multiple recharge methods incorporated in one project.

• • •Business Manager• • •

Mrs. Peggy Olsen, A.S., B.S.

Mrs. Olsen has more than 30 years of experience in accounting, human resources, budgetary, and business management. Mrs. Olsen specialites in the oversight of accounting, payroll, benefits, purchasing, IT, budgeting, project invoicing, and financial tracking.

• • •Project Managers• • •

Mrs. Sheila Ehlers, B.S.

Mrs. Ehlers has more than 20 years of experience in Arizona water resource management and state regulatory programs, including recharge and water conservation programs. Her expertise includes the permitting of Underground Storage Facilities, Groundwater Savings Facilities, Water Storage, Recovery Well permits, Aquifer Protection Permits, Assured and Adequate Water Supplies, and water rights analysis.

Mrs. Gretchen Erwin, B.S., R.G.

Mrs. Erwin has more than 24 years of experience in Arizona water resource management, state regulatory programs, and groundwater flow modeling. Her expertise includes the permitting of Underground Storage Facilities, Recovery Wells, Aquifer Protection Permits, Assured and Adequate Water Supplies, Physical Availability Demonstrations, and hydrologic testing. Mrs. Erwin has developed groundwater flow models both on regional and facility scales as water management tools and in support of ADEQ and ADWR permitting.

Experience Makes the Difference

• • • Project Managers • • •
(continued)

Mr. Tomas Goode, B.S., M.S., R.G.

Mr. Goode has more than 10 years of experience in saturated groundwater flow and transport modeling. He has developed models for a range of different geologic environments and has provided technical review of groundwater flow models. His models have provided multi-scale evaluation of hydrogeologic conditions and potential impacts associated with groundwater withdrawal as well as for artificial recharge facilities. As a complement to groundwater flow modeling, Mr. Goode also has extensive experience with GIS database management, analysis, and mapping related to watershed and hydrogeologic applications using industry standard software (ArcGIS, ArcView, ArcInfo, and associated packages). In addition to modeling applications, Mr. Goode has significant experience in evaluation of subsurface hydrogeological conditions and aquifer parameters through well drilling and testing as well as through the use of multiple geophysical techniques (including borehole and surface methods).

Mrs. C. Nancy La Mascus, B.S., R.G.

Mrs. La Mascus has more than 20 years of experience as a geologist within the southwest, including Arizona, New Mexico, and California. Mrs. La Mascus is experienced with groundwater, surface water, GIS, and water resource information systems design, development, and implementation. Mrs. La Mascus has completed hydrgoegologic investigations for Aquifer Protection, Underground Storage Facility, Water Storage permits, and a Physical Availability Demonstration.

Dr. Mario R. Lluria, Ph.D., R.G.

Dr. Lluria has more than 40 years of international experience in the groundwater industry. Dr. Lluria's specialties are in groundwater exploration, development, monitoring and remediation, aquifer recharge, water quality, geophysical surveys and geochemical exploration. He performs project management, client service and agency coordination for both large and small-scale projects. He is a National and International leader in the areas of artificial recharge, geology, and geophysics. Dr. Lluria is also known for his 100+ international/national publications on geology, geophysics, geochemistry, and groundwater and has been a keynote speaker and/or invited presenter at 12 international meetings.

Mr. Phillip M. Paski, B.S., R.G., CGWP

Mr. Paski has more than 26 years of experience in Arizona hydrogeology specializing in water resource investigations, well site evaluation studies and water production well design. Notable experience includes application of surface geophysical techniques to locate water production wells in deep fractured rock aquifers, exploration drilling, borehole geophysical log and aquifer test analysis. Mr. Paski has performed water resource investigations and environmental studies in Arizona, California, Nevada, and Vancouver Island British Columbia.

Dr. Steven Skotnicki, B.S., M.S., Ph.D., R.G.

Dr. Skotnicki has more than 15 years experience as a geologist within Arizona and New Mexico. Dr. Skotnicki provides oversight for well drilling, aquifer testing, and subsurface geophysical services; creates and reviews well logs using WellCAD, ground water data, and water quality analysis results; provides quality assurance and quality control of final reports submitted for client projects and regulatory review. His expertise includes interpreting subsurface hydrogeologic data using drill cuttings, regional and local hydrologic data, gravity data, and CSAMT geophysical surveys.

Experience Makes the Difference

* * *Support Staff* * *

Mrs. Crystal Ault, B.S.

Mrs. Ault performs field hydrologic work including data evaluation, water quality sampling, lithology logs, environmental services, aquifer testing, and oversight of well drilling and well construction. She assists in the writing and the compilation of reports including the creation of figures in AutoCAD. She manages HSI's Statement of Qualifications, outgoing proposals, and PowerPoint presentations. Mrs. Ault also maintains project schedules for Project Managers, and updates project performance reports for the business administration invoices.

Dr. Jesús R. Gastélum, Ph.D.

Dr. Gastélum has more than 12 years of experience in water resources management and planning. He has created conceptual and numerical groundwater flow models for alluvial groundwater basins. He executes a variety of hydrogeologic activities including: analysis of artificial recharge data to evaluate performance of recharge wells and to provide recommendations for expansion, rehabilitation, and testing of wells; creation of groundwater level contour maps; aquifer testing analysis; flow net analysis; reports related with the estimation of AQL and AL parameters; assisted in several tasks related to APP, USF, Assured Water Supply compliance requirements; well abandonment, design, construction, and field oversight; borehole geologic logging using sieve analysis. Also, markets water resources Decision Support Systems for municipalities based on System Dynamics approach. He has expertise with Stella and Powersim, Arc-GIS, Surfer, GMS-Modflow, and ThWells, and experience with the application of SAS and R, and HEC-HMS and HEC-RAS.

Mr. Miles McGinnis

Mr. McGinnis has expertise in AutoCAD, WellCAD, and ArcMap. He works in the creation of base maps, well designs, geophysical logs, and geologic log illustrations. Mr. McGinnis also provides field support that includes data gathering, aquifer testing, water quality sampling, and equipment maintenance and repair.

Mr. Brandon McLean, B.S., M.S., G.I.T.

Mr. McLean provides professional support on a wide variety of projects including but not limited to oversight during well drilling and aquifer testing, groundwater and surface water sampling, and borehole logging. He interfaces with laboratories and provides Quality Assurance and Quality Control of analytical data. His expertise is in aqueous geochemistry that includes the use of AquaChem and Excel for water quality database management and EQ3/6 and PHREEQC for geochemical modeling. He uses geochemical and mass-balance models to analyze blending options associated with direct-injection/vadose-zone recharge projects. In addition, he provides water quality and geologic assessments to facilitate in the acquisition of USF and APP Permits.

Mrs. Maria Mikaelian

Mrs. Mikaelian has extensive background in business administration, project management, and coordination. Her specialties are service support as well as library management, job costing and accounting support functions.

Mr. Chris Weyrauch, A.S.

Mr. Weyrauch provides field support that includes data gathering, site O & M, aquifer testing, water quality sampling, and equipment upkeep and repair. He has expertise in ArcGIS, AutoCAD, Adobe Photoshop, PowerPoint, MS Word, and Excel. Mr. Weyrauch's specialties are in the creation of graphic figures and the utilization of Excel, AutoCAD, and ArcGIS for base maps, well design, hydrographs, geophysical logs, and geologic log illustration.

Project Overview

Assured & Adequate Water Supply

SunCor Development Company

Project Summary: HSI conducted a background hydrogeologic study of the American Ranch Property for SunCor Development Company. This included an analysis of the existing on-site surface water and groundwater resources and potential off-site water sources. Documented data collection and analysis in the client report for use in property negotiations. This report will be developed into a hydrogeologic report supporting Physical Availability Demonstration application to ADWR.

Vidler Water Company - MBT Harquahala Valley Farms I

Project Summary: HSI provided hydrogeologic analyses of the available groundwater supply for transfer from the MBT Ranch and the Harquahala Valley Farms I in support of a Physical Availability Demonstration application to ADWR. This Assured Water Supply analysis included evaluating (1) statutory impacts, (2) operational impacts, and (3) hydrologic bedrock impacts of withdrawing groundwater for 100 years.

Water Resource Assessments & Appraisals

Bureau of Reclamation, Mogollon Rim Water Resources Management Study

Study Area

Project Summary: The Mogollon Rim Water Resources Management Study is an appraisal level evaluation of regional water resources and water use alternatives for the growing communities along the Mogollon Rim in Gila County. The Study area is entirely within the central Arizona Transition Zone physiographic province, and is one of the most complex hydrogeological areas within the State. The Study required an in-depth evaluation of the region's current water supplies and future alternatives available to its communities. HSI was responsible for analyzing the hydrogeologic system; integrating work performed previously in the Study which includes geological mapping, isotopic geochemistry of springs and wells in the area, as well as general water chemistry analyses. HSI prepared a summary document for this Study as an information baseline for water resources planning. This report provides a conceptual hydrogeological framework of the Study area and a review of the possible water resource alternatives as a guide for future water management.

Far West Water & Sewer, Inc.

Performance Testing of Irrigation Well

Project Summary: Projects performed for Far West Water & Sewer, Inc. include services for the water and wastewater utility and private developer. Initially, HSI assisted Far West with hydrogeologic studies in support of applications for seven Aquifer Protection Permits (APP's) for wastewater treatment facilities. This included baseline data collection, evaluation, soil and water sampling, percolation testing, installation of one vadose zone recharge well, preparation of documentation for submittal to ADEQ, agency response to comments, and support services for the project engineer. HSI has also assisted Far West with the design, drilling, and testing of one irrigation well, evaluation and recommendations for existing utility production wells, and planning for installation of additional water production wells, and well rehabilitation services. Project completion is expected in 2010.

Phase I Environmental Assessments to Document Potential Environmental Problems

Accomazzo Company - Gladden Properties
Gladden Farm

Sun West Holdings & Sweetwater Health Services - Olivio Del Rio Property
15 farms (18,000 acres)

Vidler Water Company - Harquahala Valley
Privately owned land parcels

Project Overview

Expert Witness

Baker vs. Motorola

Project Summary: Provided technical services in reviewing and evaluating hydrogeologic conditions surrounding the contamination of the regional aquifer.

Eureka County, Nevada vs. Newmont Gold Company

Project Summary: Provided technical services in reviewing and evaluating hydrogeologic conditions surrounding the removal of groundwater for the mining of gold and where the water is deposited.

Groundwater Modeling

Agua Fria – Central Arizona Water Conservation District

Project Summary: HSI updated and revised the ADWR Salt River Valley (SRV) groundwater flow model for permitting of Salt River Project's New River Agua Fria Underground Storage Project (NAUSP) in the west SRV. The SRV groundwater flow model was utilized to demonstrate hydrologic impact and feasibility of the NAUSP project on a regional scale. MODFLOW datasets obtained from ADWR were assembled in a database format so they could be readily input to Visual MODFLOW. The NAUSP model simulates the three major hydrogeologic units of the SRV, the Upper Alluvial Unit (UAU), Middle Alluvial Unit (MAU), and the Lower Alluvial Unit (LAU) using three model layers. The groundwater model simulates groundwater underflow into and out of the model area, pumpage, recharge, evapotranspiration, and stream losses and gains along the perennial reaches of the Salt and Gila Rivers. Aquifer testing data for over 40 wells operated by Salt River Project and soil boring information were used to revise hydrologic parameters in vicinity of the NAUSP. The NAUSP model simulates transient flow conditions from December 1991 to December 2004 and is calibrated to observed 1997 water level information. Artificial recharge from the NAUSP and all other permitted recharge facilities in the West SRV were simulated for 20 years into the future to assess potential impacts

City of Prescott Recharge Facility

Prescott Active Management Area

Project Summary: HSI updated the ADWR/NAU Prescott AMA Regional Groundwater Flow Model (2006) for permitting of the City of Prescott recharge facility. The model was utilized to estimate the hydrologic impacts from the recharge facility on a regional scale. The model simulates the two major hydrogeologic units in the Chino Valley and Upper Agua Fria groundwater sub-basins, the Upper Alluvial Unit (UAU) and the Lower Volcanic Unit (LVU). The groundwater model seasonally simulates pumpage, agricultural recharge, groundwater underflow, mountain front recharge, discharge at Del Rio Springs, and flood recharge along Granite Creek, Lynx Creek, and the Agua Fria River. The model was updated with 2005 and 2006 pumpage and was used to simulate transient flow conditions from October 1939 to March 2007. Artificial recharge from the City of Prescott Recharge Facility, Chino Valley Recharge Facility, and the Prescott Valley Recharge Facility were simulated for 20 years into the future to assess potential impacts.

City of Scottsdale & GDW, LLC - North Scottsdale Aquifer Storage & Recovery Project

Project Summary: HSI constructed a groundwater flow model of the aquifer system in the Cave Creek-Carefree Basin and is defined by the extent of the Carefree Formation. This three-dimensional MODFLOW model incorporates two horizontal layers. The steady-state model simulated pre-1962 hydrologic conditions while the transient model was calibrated to the years 1984 and 1998. The conceptual geologic model is based on work performed by Doorn and Pewé. The hydrologic model includes mountain front recharge, ephemeral stream recharge, urban and agricultural recharge, underflow to the southwest near Cave Creek, evapotranspiration, and groundwater pumpage. The model was used in support of permitting the North Scottsdale Aquifer Storage and Recovery Project (NSASRP).

Project Overview

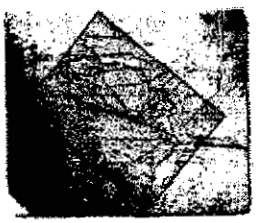
Groundwater Modeling
(continued)

Fountain Hills Sanitary District (FHSD) - Fountain Hills Sub-basin

Fountain Hill Sub-basin

Project Summary: HSI constructed a groundwater flow model of the Lower Verde Valley a.k.a the Fountain Hills Sub-Basin. The model incorporated all available lithologic data from drillers logs as well as gravity and magnetic geophysical surveys of the basin. Historical hydrologic data evaluated for the model included: water levels, 30 years of rain gage data, 30 years of stream gage information for the Verde and Salt Rivers, historical agricultural diversions from the Verde River, stream gage information for Sycamore Creek, ADWR pumping records for all non-exempt groundwater users in the valley, and historical water use for municipal water providers. All available data was processed into a series of GIS coverages. The numerical groundwater flow model infused the GIS based conceptual model data into the USGS MODFLOW software using Groundwater Modeling System (GMS) software. The steady state component of the groundwater model was pre-1970, and the transient component was from 1970 to 2000. The groundwater flow model simulates domestic and municipal pumping, agricultural diversion of stream flow, underflow into the Salt River Valley, mountain-front recharge from precipitation, stream infiltration, and evapotranspiration from the riparian vegetation along the Verde and Salt Rivers. The model was calibrated to the available groundwater elevation data from wells throughout the basin. The results of the modeling effort support the Arizona Department of Water Resources (ADWR) application for a full-scale Underground Storage Facility operated by the FHSD and determine hydrologic feasibility (per regulatory requirements).

Red Gap Ranch, LLC - Groundwater Flow Model



Numerical Groundwater Flow Model for Red Gap Ranch

Project Summary: HSI constructed a numerical groundwater flow model of the Colorado Plateau using GMS and MODFLOW 2000 that encompasses approximately 1,300 square miles including a portion of the Navajo Indian Reservation and the City of Winslow. The model incorporated information from drillers' logs as well as the data from surface geophysical surveys conducted in the area, which used Controlled Source Audio Frequency Magnetotellurics (CSAMT). The model includes perennial reaches of the Little Colorado River and evaluates evapotranspiration from the vegetation along its floodplain. The model incorporates perennial stream flow from Chevelon Creek and Clear Creek using the stream-aquifer interaction package. The hydrogeologic system defined as steady state for current conditions and was used to simulate multiple water use scenarios. The groundwater flow model simulates pumping, underflow, ephemeral and perennial stream recharge, and evapotranspiration from the floodplain of the Little Colorado River. The model was calibrated to observed groundwater elevation data collected from 166 wells throughout the area, and baseflow calculated for a perennial reach of Clear Creek. The model provided a quantitative tool to assess potential impacts due to groundwater development on the Red Gap Ranch.

Vidler Water Company - Harquahala Valley

Project Summary: HSI constructed a three dimensional, numerical groundwater flow model of the Harquahala Valley using MODFLOW. The model simulates steady state conditions (1949) and transient conditions from 1950 -1997. The model incorporates the entire post-development period and simulates pumping, underflow, mountain-front recharge, ephemeral stream recharge, agricultural recharge, canal leakage and evapotranspiration. The model was calibrated to groundwater level data from the years 1949, 1963, 1979, and 1997. The model was used to support permitting of a 100-year Assured Water Supply and the Underground Storage Facility permitting of a large-scale recharge facility operated in the valley.

Project Overview

Groundwater Recharge

Artificial groundwater recharge and recovery is becoming an essential part of properly managing water resources, especially in the Southwest where water is scarce and a critical commodity. Site selection and type of recharge are chosen based on the hydrogeology of the site. The most common types of artificial groundwater recharge are listed in the projects below. They include aquifer storage and recovery (ASR) wells, direct injection wells, spreading basin recharge, and vadose zone well recharge.

Aquifer Storage & Recovery Wells

FHSD - Fountain Hills Aquifer Storage & Recovery Facility

Vault for an ASR Well

Project Summary: The FHSD is responsible for the disposal of treated wastewater (effluent) generated by the population of Fountain Hills. A solution was to store excess effluent during the winter season and recover the stored water for use during the summer months. This type of system is termed Aquifer Storage and Recovery (ASR). A unique feature of these ASR wells is the fully self-contained vault structure that completes the well. These vaults were manufactured complete with piping and instrumentation and are simply lifted over the existing well and pad and set on top. The vaults have a wet and dry side. The wet side of the vault contains the well and the dry side contains all the electrical control equipment.

Direct Injection Wells

City of Chandler - Intel Recharge Project

Project Summary: Perform hydrogeologic and groundwater recharge evaluations for the recharge phase of this project. Design and construct five direct injection wells to recharge 2.3 mgd of reclaimed process water. An automated operating system used to match the injection rate of the wells with the RO Treatment Facility located six miles away. This project is injection only with no recovery.

Spreading Basins Recharge

Salt River Project - New River-Agua Fria Underground Storage Project

Spreading Basins

Project Summary: The Salt River Project (SRP) contracted the services of HSI to assist with preparation of the permit application for the New River-Agua Fria *Underground Storage Project* (NAUSP) located near the confluence of New River and Agua Fria River in the West Salt River Valley in Arizona. The NAUSP is a groundwater recharge project that will utilize direct surface recharge methods for underground water storage. Incoming water delivered from the tail of the Grand Canal will be measured by a broadcrested weir as it enters an unlined delivery recharge channel and is directed through gates to six recharge water spreading basins. *The system is* designed as fully automated with manual overrides.

Monitoring of the recharged water will be from seven attendant monitor wells and one vadose zone well. All water delivered to the site as inflow, basin water level measurements, and groundwater level measurements from the monitor wells will be monitored and collected by an automated communication system. During the application process, SRP *retained additional services* from HSI to perform groundwater modeling of the project to address potential impacts. The modeling effort consisted of revising an earlier MODFLOW model and responding to comments offered by the reviewing regulatory agency.

SunChase Estrella Limited Partnership - SunChase II Waterman Basin – Estrella Mountain Ranch

Project Summary: HSI performed a preliminary evaluation of sites for several spreading basins of treated water from a planned wastewater treatment facility. HSI selected possible sites, then supervised soil boring, drilling and evaluation testing results. These activities led to recommendations for other alternatives for recharge of the treated wastewater.

Project Overview

Groundwater Recharge

Spreading Basins Recharge (continued)

Vidler Water Company - Vidler Recharge Facility

Full Scale Spreading Basins

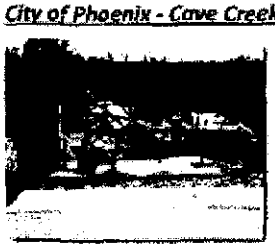
Project Summary: Vidler Water Company (VWC), a privately held corporation, has developed the Vidler Recharge Facility (VRF) in the Harquahala Valley, approximately 90 miles west of the Phoenix, Arizona metropolitan area to be used as a groundwater storage facility of excess Central Arizona Project (CAP) water supply. This facility has been designed and permitted to store 100,000 acre-feet of water annually for 20 years. Associated with the recharge project, a recovery facility, consisting of high capacity production wells, will be developed in the near future to recover 40,000 acre-feet of stored water annually. The VRF uses a combination of methods to store the CAP water including basins and vadose zone recharge wells.

Vadose Zone Recharge Wells

Carefree Water Company - Carefree Recharge Facility

Project Summary: HSI assisted with preparation of the permit application for a pilot-scale USF. The scope of this project involved the construction of vadose zone recharge wells for recharging non-potable CAP water and a monitor well for observing groundwater quality and groundwater level impacts near the recharge site.

City of Phoenix - Cave Creek WRF Recharge Facility



Vadose Zone Well 5

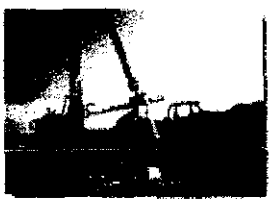
Project Summary: The City of Phoenix's Cave Creek Water Reclamation Facility is responsible for the disposal of treated wastewater (effluent) generated by the population of north Phoenix and Paradise Valley area. HSI assisted in the design, construction and permitting of a pilot-scale USF to recharge future unused water supplies for long-term recharge through vadose zone recharge wells. The scope of our work also included the design and construction oversight of two monitor wells, and two piezometer wells. HSI provided construction oversight for seven (7) vadose zone recharge wells, a deep exploratory borehole, two monitor wells and two nested piezometer wells. Oversight included monitoring drilling and construction activities as well as characterizing subsurface conditions for each of the different wells. HSI coordinated drilling and construction activities with City of Phoenix staff, project engineers, and various subcontractors. After the recharge facility construction, HSI developed a recharge testing protocol, and was involved in coordinating and managing one-month testing of the facility. At the conclusion of the first recharge season, HSI developed a vadose zone recharge well completion report documenting the construction and testing of the facility. The completion report provided data analyses of local hydrogeologic conditions as related to observed water level, recharge rate, and pressure changes associated with recharge operations and provided recommendations for optimizing recharge activities.

Project Overview

Groundwater Recharge

Vadose Zone Recharge Wells (continued)

City of Scottsdale (COS) - Water Campus



Vadose Zone Well Drilling

Project Summary: The COS, in their commitment to managing their water resources, has developed a state-of-the-art water resources reclamation project called the Water Campus. An integral part of the COS's Water Campus is the ability to store and reserve excess and reclaimed water supplies for the future. The Water Campus includes an advanced water treatment (AWT) plant, regional wastewater reclamation plant, collection system, and recharge and recovery system. The project allows the COS to treat wastewater and redistribute reclaimed water to the golf courses in the northern portion of the COS. Excess reclaimed water is treated in the AWT plant to drinking water quality and then recharged back into the vadose zone through the aquifer storage facility component of the recharge and recovery system. Following original completion in 1998, HSI was contracted to perform injection testing on COS ASR Well 122 to document the injection rate. This project included equipment design review, environmental permitting, pre-operations planning, plus injection testing oversight. In addition, HSI was contracted to perform short-term injection testing on COS ASR Well 123. These field test data were used to support Underground Storage Facilities Permit modifications and Water Storage permits with ADWR and develop start up and operational procedures for both wells. The ultimate treatment capacity will be 24 million gallons per day (mgd), starting with an initial capacity of 8 mgd with future expansion made in 4 mgd increments.

City of Tempe - Kyrene Pilot Groundwater Recharge Project

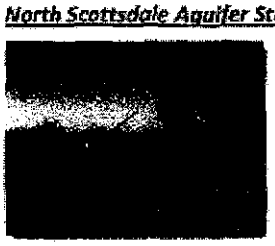
Project Summary: Perform hydrogeologic and recharge evaluations prior to constructing three vadose zone recharge wells for recharging high quality reclaimed water and three monitor wells. Pilot recharge testing determined hydrogeologic parameters for assessing the potential for mounding. HSI provided oversight and support to City of Tempe staff on environmental permitting for this project.

DMB - Verrado Recharge Facility

Vadose Zone Well Vault Installation

Project Summary: DMB Associates, Inc. (DMB) developed a master planned community in the Town of Buckeye, on the eastern side of the White Tank Mountains. HSI assisted in the construction of an USF to recharge future unused water supplies, including, but not limited to reclaimed effluent generated from the Verrado Water Reclamation Facility. HSI assisted in the preparation of the USF for long-term recharge feasibility using vadose zone recharge wells. A total of two vadose zone recharge wells and two monitor wells were constructed at the site.

North Scottsdale Aquifer Storage & Recovery Project



Vadose Zone Well Drilling

Project Summary: An aquifer storage and recovery project was designed and constructed in north Scottsdale in an effort to meet current water demands for the Irrigation Water Distribution System (IWDS) without further depletion of the ground water resources in this area. GDW, LLC is a consortium of golf courses in and near the City of Scottsdale (COS). HSI assisted with the permitting, well design, testing, and construction oversight for this project. The scope of this project involves the construction of vadose zone recharge wells used for recharging non-potable Central Arizona Project (CAP) water, recovery wells for supplying water to the IWDS and COS, conversion of two recovery wells (ADWR well registration numbers 55-595259 and 55-595260) to ASR wells, and monitor wells for observing ground-water quality and ground-water level impacts near the recharge site. This recharge facility, including the vadose zone recharge wells, recovery wells, ASR wells, and monitor wells, is now owned and operated by the COS.

Project Overview

Monitor Well Projects

City of Phoenix - Cave Creek Wastewater Reclamation Facility

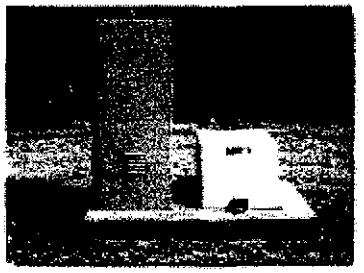
Project Summary: HSI performed hydrogeologic services to design, permit, develop specifications, and install one monitor well and ten soil borings. Project includes the design and installation of two piezometer wells. HSI assembled the pertinent hydrogeologic data in a suitable format for assistance in obtaining a USF, WS, and APP permits.

City of Scottsdale - Water Campus

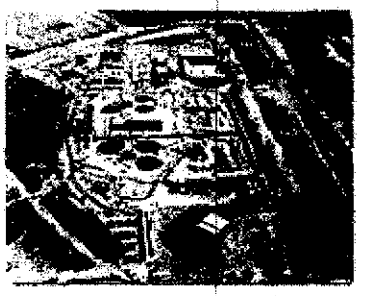
Project Summary: HSI performed hydrogeologic services to design, permit, develop specifications, and install four deep monitor wells, four shallow monitor wells, and twelve soil borings. Assemble the pertinent hydrogeologic data in a suitable format for obtaining a USF, WS, and APP permits.

DMB - Verrado Recharge Facility

Project Summary: HSI performed hydrologic services in identifying potential recharge sites for DMB's master planned community in Buckeye. As part of the recharge facility, HSI permitted, designed, and tested one monitor well to assist in groundwater level and groundwater quality testing required for the USF permit. The recharge facility will recharge future unused water supplies, including reclaimed effluent generated from the Verrado Water Reclamation Facility through vadose zone recharge wells.



Monitor Well



Water Campus Aerial

Monitor Well Installation

Red Gap Ranch, LLC - Red Gap Ranch

Project Summary: HSI performed hydrologic services in identifying potential production well sites for Red Gap Ranch, LLC. HSI obtained the necessary permit required to drill the new production wells as well as the slim holes. HSI designed, developed specifications, and provided drilling oversight for the well. HSI conducted zonal water quality sampling and advised the client regarding the well completion. HSI conducted aquifer testing and provided data regarding pumping levels for the appropriate pump settings. All of the pertinent hydrologic data were assembled into a well completion report.

Show Low Bluff

Project Summary: After completion of surface geophysical survey, an exploration/monitor well was drilled and installed for the planned Show Low Bluff community. HSI located the well site based on the CSAMT survey, developed the well design and technical specifications, provided drilling, testing, and sampling oversight, and prepared the completion report.

Monitor Well Installation

Stone Container - Stone Container APP

Project Summary: HSI developed a conceptual plan for the installation of monitor wells to meet the requirement of new and existing APP. Perform hydrogeologic evaluations for the permitting and installation of one production well and eleven monitor wells. Develop well designs and drilling specifications. Perform field supervision and data analysis for the well drilling, geophysical logging, and aquifer testing. Develop completion reports summarizing well construction for use as supporting material with the APP's.

Permitting

HSI has extensive experience in the complex regulatory permitting process of local agencies. Some of the more common permits include required for Underground Storage Permit, Water Storage Permits, Assured Water Supply Permits, Monitor Well & Production Well Permits plus Aquifer Protection Permits. HSI has assisted numerous clients in obtaining these permits for various projects. A few are listed below.

Aquifer Protection Permit

Burns & McDonnell - Lake Havasu City Mulberry & North Regional WWTP Recharge Facility
City of Chandler - Intel Pilot Recharge Project & Chandler Regional Park
City of Glendale - Arrowhead Ranch Reclamation Facility
City of Phoenix - Cave Creek Wastewater Reclamation Plant Recharge Facility
City of Scottsdale - SRP/CAP Project, WestWorld Recharge Facility, & Water Campus
City of Surprise - SPA-1
DMB - Verrado Recharge Facility
Global Water - Palo Verde Utilities Company Water Reclamation Facility (Campus 1 & Campus 2)
New Springs Water Company - Gold Canyon Sewer Company
Pen Rob Inc. - Pen Rob Landfill
Pima Utility - Sun Lakes
Stone Container Corporation - Snowflake Mill Site
Town of Huachuca, Arizona - Huachuca City Landfill

Groundwater Savings Facility Permit ♦ Recovery Well Permit
Underground Storage Facility ♦ Water Storage Permit

Central Arizona Water Conservation District - Agua Fria (USF)
City of Chandler - Chandler Regional Park (USF, & WS)& Intel Pilot Recharge Project (USF)
City of Phoenix - Cave Creek Wastewater Reclamation Plant Recharge Facility (USF & WS)
City of Phoenix - Roosevelt Irrigation District (GSF & WS)
City of Scottsdale - SRP/CAP Project, WestWorld Recharge Facility, & Water Campus (USF & WS)
City of Scottsdale - North Scottsdale Aquifer Storage & Recovery & Water Campus (RW)
City of Surprise - SPA-1 (USF)
City of Tempe - Kyrene Recharge Project (USF & RW)
DMB - Verrado Recharge Facility (USF)
Fountain Hills Sanitary District - Fountain Hills Recharge Facility (USF)
Global Water - Southwest Water Distribution Center (USF & WS)
Pima County - Pima County (USF & WS)
Salt River Project - NAUSP (USF)
Vidler Water Company - Vidler Recharge Facility (USF & WS)

Monitor Well Drilling Permits

City of Chandler - Chandler Regional Park Recharge Facility
City of Glendale - Arrowhead Ranch Reclamation Facility
City of Scottsdale - Water Campus Monitor
City of Surprise - Effluent Recharge Project & McMicken Dam Pilot Recharge Project, SPA-1
City of Tempe - Kyrene Recharge Project
Fountain Hills Sanitary District - Fountain Hills Recharge Facility
Global Water - Campus 1, Campus 2, Hassayampa, & Southwest Water Distribution Center
Pen Rob Inc. - Pen Rob Landfill
Stone Container Corporation - Snowflake Mill Site
Vidler Water Company - Vidler Recharge Project

Production and Municipal Well Drilling Permits

City of Chandler - Shawnee, Amberwood Park, & Desert Breeze Park (Municipal)
City of Scottsdale - IWDS (Municipal)
Fountain Hills Sanitary District - Fountain Hills Recharge Facility (Production)
SunChase Estrella Limited Partnership, LLC. - Rainbow Valley, Arizona (Production)

Permitting

Summary of the Approximate Number of Permits that HSI has Acquired

Arizona

	Permits Obtained
ADEQ Permits	
Aquifer Protection	40
ADWR Permits	
Underground Water Storage	
Groundwater Savings Facility	5
Underground Storage Facility	30
Water Storage	15
Drilling	
Direct Injection and Aquifer Storage & Recovery Well Drilling	10
Exploration Well Drilling	10
Monitor Well Drilling	95
Production and Municipal Well Drilling	80
Recovery Well	10
Soil Boring Drilling	20
Test Well Drilling	10
Vadose Zone Recharge Well Drilling	110
Well Abandonment	50
Well Modification	10
Assured Water Supply Program	
Certificate of 100-year Assured Water Supply	10
Physical Availability Demonstration	10
Water Adequacy Report	5

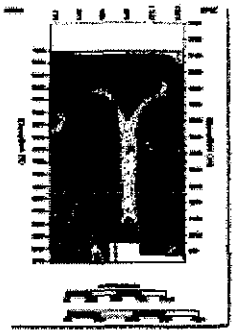
Nevada

	Permits Obtained
Right-of-Way Grant/Temporary Use	5
Temporary Well Testing Discharge	10
Water Right Application	5

Project Overview

Water Production and Municipal Service Area Wells

City of Flagstaff



CSAMT Line

Project Summary: Since 2003, HSI has been assisting the City of Flagstaff with hydrogeologic consulting services. Initially HSI planned and provided oversight for well site evaluation studies using the CSAMT surface geophysical technique identifying ten candidate well sites throughout the City. This led to a contract where HSI developed the well design, technical specifications, bid services, project oversight for drilling, aquifer testing and sampling, plus supplied supporting documentation for the City's Water Source Develop Project. This project consists of drilling and equipping up to four water production wells with the project goal of each well producing 300 gpm. Two wells have been completed, each exceeding the project goal with one well tested at 1,340 gpm. The City of Flagstaff rests on the southern edge of the Colorado Plateau in an area known for difficult drilling conditions with the most productive wells accessing groundwater from deep seated fractures in the regional aquifer. Project completion is expected in 2010.

City of Scottsdale & GDW, LLC & North Scottsdale - Aquifer Storage & Recovery Project

Vadose Zone Well Drilling

Project Summary: HSI assisted GDW, LLC with the permitting, well design, testing, and construction oversight. A portion of the scope of this project involved the construction of six water production/recovery wells. The recharge facility will include the recovery wells, vadose zone recharge wells used for recharging non-potable Central Arizona Project (CAP) water, and monitor wells for observing ground-water quality and ground-water level impacts near the recharge site. This recharge facility, including the vadose zone recharge wells, recovery wells, and monitor wells, is be owned and operated by the COS.

City of Scottsdale - WestWorld Recharge Facility

Project Summary: HSI preformed hydrologic services in identifying potential production/recovery well sites for the WestWorld Recharge Facility. HSI obtained the necessary permit required to drill the new production/recovery well. HSI designed, developed specifications, and provided drilling oversight for the well. HSI conducted zonal water quality sampling and advised the client regarding the well completion. HSI conducted aquifer testing and provided data regarding pumping levels for the appropriate pump settings. All of the pertinent hydrologic data were assembled into a well completion report.

FHSD - Replacement Well

Project Summary: HSI preformed hydrologic services in identifying several potential production well sites for the replacement of a Chaparral City Water Company production well. Three test well sites were drilled. One site was chosen and developed into a production well. HSI obtained the necessary permits required to drill the test wells and new production well. HSI developed specifications, and provided drilling oversight for the wells. HSI conducted zonal water quality sampling and advised the client regarding the well completion. HSI conducted aquifer testing and provided data regarding pumping levels for the appropriate pump settings. All of the pertinent hydrologic data were assembled into a well completion report.

Red Gap Ranch, LLC - Deep Production Well in Northeast Arizona

Production Well Aquifer Test

Project Summary: HSI preformed hydrologic services in identifying potential production well sites. HSI obtained the necessary permits required to drill the new production wells as well as the slim holes. HSI designed, developed specifications, and provided drilling oversight for the wells. HSI conducted zonal water quality sampling and advised the client regarding the well completion. HSI conducted aquifer testing and provided data regarding pumping levels for the appropriate pump settings. All of the pertinent hydrologic data were assembled into a well completion report.

Project Overview

Water Production and Municipal Service Area Wells
(continued)

SunChase Estrella Limited Partnership - SunChase I & SunChase II

Project Summary: HSI provided the preliminary well design and drilling oversight of a large diameter production well (SunChase I). Results from isolated zone sampling and testing showed that this well did not meet the expected water quality basis of this project. This study led to selection of an additional site for constructing and testing of another well (SunChase II). The quality of water in SunChase II was of much higher quality. The client chose to use this well for water quality testing and postpone its use as a water production well until the water quality could be tested in the surrounding valley.

Town of Gilbert - Fire Station 1 Reservoir & Pump Station

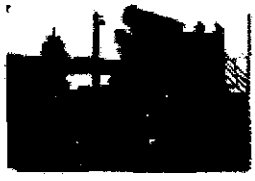
Project Summary: HSI acquired permits for a replacement well and an abandonment of two wells. HSI also developed the abandonment procedure and managed field oversight of the well abandonment activities as well as developing technical specifications for pilot well drilling and construction of the production well. Five total zonal water quality samples were collected from the pilot well, which guided the final well design in order to avoid poor water quality zones and screen in areas with good water quality and greater water production potential. HSI provided construction oversight and management, geologic logging, aquifer testing and analysis, water quality sampling, and developed a completion report for the replacement water production well.

Vidler Water Company - Sandy Valley, Nevada Production Well

Production Well Pump Test

Project Summary: HSI provided services for the design, drilling oversight, and data analysis of an exploration/test well in the Mesquite Groundwater Basin in Sandy Valley, which is located approximately 40 miles southwest of Las Vegas, Nevada. Prior to drilling at the Sandy Valley site, HSI performed a preliminary site visit and comprehensive data search and evaluation, which led to selection of three well sites in this basin. The goal of the project was to obtain groundwater from the underlying carbonate rock aquifer. After drilling of the exploration/test well to 1,502 feet and completing the well in the carbonate rock aquifer, aquifer discharge testing was conducted with water quality sampling of the well in addition to other domestic wells in the area. The maximum discharge rate of the test amounted to 1,700 gallons per minute. An additional monitor well was drilled at the same site to 341 feet, terminating in the overlaying alluvial aquifer, where an additional short duration aquifer test was conducted by placing a pump in the monitor well and recording water level measurements. At various times during the project HSI assisted the Vidler Water Company at public information meetings to the residents of Sandy Valley. Information gained during the field activities and data analysis was presented in a water rights hearing to the Nevada State Engineer in support of water rights applications submitted by the Vidler Water Company.

Vidler Water Company - Tule Desert, Nevada Production Well



7-day Aquifer Test Pumping Equipment

Project Summary: HSI performed hydrogeologic investigative services in Tule Desert, which is located approximately 90 miles northeast of Las Vegas, Nevada. From 2000 to 2002, field activities consisted of: drilling two initial exploration/test wells to about 2,000 feet; followed by a basin-wide surface geophysical survey using the CSAMT method; constructing one large diameter water production well to 1,800 feet; and three additional monitor wells. Associated work included: aquifer testing; groundwater sampling and analysis of all newly constructed wells; sampling of springs; and groundwater level measurements. Since Tule Desert contained virtually no subsurface information, other than a few remote sensing studies, HSI provided planning, design, field oversight, and evaluation of the collected data. This information was presented in a water rights hearing to the Nevada State Engineer in support of water right applications submitted by Lincoln County and Vidler Water Company.

Project Overview

Well Abandonment

City of Mesa

Project Summary: Provided technical oversight to abandon two monitor wells and one production well associated with the Mesa Northwest Water Reclamation Plant. ADWR well abandonment permits were obtained and individual well abandonment designs were developed.

City of Phoenix

Project Summary: HSI developed a process to systematically abandon 40 municipal wells within the city's service area that included: video and geophysical logs for background data to develop individual abandonment designs. Technical specifications contained the abandonment procedure for 26 well sites. ADWR well abandonment permits were obtained prior to the start of abandonment and additional services included preparation of technical specifications for demolition of attendant well equipment at 12 sites.

Well Rehabilitation Projects

Fountain Hills Sanitary District - CCWC Well Rehabilitation

Project Summary: Two existing CCWC wells were converted from water production wells to ASR wells. The full well rehabilitation process included the following tasks: video logging, alignment survey, well rehabilitation design, well modification permit, wire brushing, sonar jetting, perforating, chemical treatment, short term aquifer testing, water quality sampling, and BART (microbiological) testing.

Fountain Hills Sanitary District - ASR Well Rehabilitation

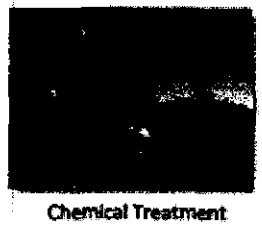
Aqua Freed

Project Summary: HSI was contracted to perform a "complete cleaning" that took place at all five ASR wells in order to correct the decrease in recharge capacity. For ASR wells 1-4, a "complete cleaning" included pulling the pump, removing the debris in the well, chemical treatment, applying physical agitation followed by airlifting, test pumping, and the reinstalling of the ASR equipment. After the complete cleaning, four of the five ASR wells received the Aqua Freed process by the Layne Christensen Company.

Prior to rehabilitation, the ASR wells demonstrated an average decrease of 78% in recharge specific capacity and an average decrease of 73% in pumping specific capacity. After rehabilitation, the recharge capacity increased to an average of 83.8% and pumping specific capacity increased to an average of 63.8%.

Other Rehabilitation Methods:

Mechanical Cleaning



Chemical Treatment

Airlifting & Swabbing

Partial Client List

Since April of 1994, HSI is proud to have provided service to these clients

Development Companies

Cachet Western
Desert Mountain Properties
DMB
Engle Homes
Grayhawk Development Company
Greenfield Land Development
Johnson International
McRae Group
MT Development Company
Newland Communities
Richmond American
Robson Communities
SunCor Development Company
Sun MP, LLC
Triple L Management, LLC
Vanguard Properties
Viking Development Company
Walton Development
Western Land Planning
Westminster Swanson Land Partners

* * *

Engineering Firms

AMEC
Arizona Engineering Company
B&R Engineering
Black & Veatch
Bookman Edmonston Engineering
Brown & Caldwell
Burns & McDonnell
Carollo Engineers
CDM Engineering
CSA Engineering Inc
Damon S. Williams and Associates
Dibble Engineering
Entellus
Entranco
Environmental Compliance Int.
George Cairo Engineering, Inc
Greeley & Hansen Engineers
HDR
Hunter Contracting Co
Ironside Engineering
Lockwood, Andrews, & Newnan, Inc
Malcolm Pirnie Engineers
McBride Engineering
MGC Contractors, Inc.
Moore and Associates
Parsons Engineering Science
Rick Engineering
Specific Engineering, LLC
Stantec
Wilson Engineers

* * *

Municipalities/Government Entities

Arizona Park Service
Central Arizona Project/Central Arizona Water Conservation District
City of Chandler, AZ
City of Flagstaff, AZ
City of Glendale, AZ
City of Goodyear, AZ
City of Holbrook, AZ
City of Lake Havasu, AZ
City of Mesa, AZ
City of Peoria, AZ
City of Phoenix, AZ
City of Prescott, AZ
City of Scottsdale, AZ
City of Show Low, AZ
City of Surprise, AZ
City of Tempe, AZ
City of Williams, AZ
Colorado River Indian Tribes, Parker, AZ
Eureka County, NV
Gila River Indian Community, AZ
Maricopa County Flood Control District
State of Arizona, Department of Corrections
State of Arizona, Department of Emergency and Military Affairs
State of Arizona, Department of Environmental Quality
Town of Cave Creek, AZ
Town of Gilbert, AZ
Town of Huachuca, AZ
Town of Payson, AZ

* * *

Private Entities

ASR Resources, LLC, Sun Lakes, AZ
Ayers & Brown, P.C, Phoenix AZ
GDW, LLC, Scottsdale, AZ
Honeywell, Phoenix, AZ
New Springs Water Company, Carefree, AZ
Pinnacle Peak Country Club, Scottsdale, AZ
Red Gap Ranch, LLC
Spring Express, Inc., Phoenix, AZ
Stone Container, Inc., Snowflake, AZ
Vanderbilt Farms, Tempe, AZ
Vidler Water Company, Carson City, NV
Yavapai Ranch, Scottsdale, AZ

* * *

Utility

Algonquin Water Services, Gold Canyon, AZ
Allegheny Energy, PA
Arizona American Water Co., Phoenix, AZ
Carefree Water Company, Carefree, AZ
Del Rio Water Company, LLC, Prescott, AZ
Doney Park Water Company, Flagstaff, AZ
Far West Water & Sewer Inc, Yuma, AZ
Fountain Hills Sanitary District, Fountain Hills, AZ
Global Water Resources, LLC, Phoenix, AZ
Improvement District, Pinetop, AZ
Pima Utility, Chandler, AZ
Pima County Wastewater Management Dept., Tucson, AZ
Ponderosa Domestic Water
Salt River Project, AZ
Sunrise Water Company, Peoria, AZ
Orange County Water District, Orange County, CA

HydroSystems, Inc.
9831 S. 51st St. Suite E-122 Phoenix, Arizona 85044
Telephone: 480-517-9050 Fax: 480-517-9049

PRINCIPALS
Gary G. Small
Roxanne Small

BUSINESS MANAGER
Peggy Olsen

Team HSI
Crystal Adil
Sheila Ehlers
Gretchen Erwin
Jesus Gastelum
Tomas Goode
Nancy Lamascus
Mario Loria
Miles McGinnis
Brandon McLean
Marla Mikaelian
Phil Paski
Steve Skotnicki
Chris Weyrauch

PROFESSIONAL SERVICES AGREEMENT

THIS AGREEMENT FOR SERVICES, hereinafter referred to as "Agreement," is entered into this ___ day of ___ 2009, between HydroSystems, Inc., hereinafter referred to as "HSI," and ___ hereinafter referred to as "OWNER."

In consideration of the mutual promises set forth herein, it is agreed by and between HSI and OWNER as follows:

COMPLETE AGREEMENT

The terms and provisions of this Agreement shall constitute the entire contract between the parties and no modification or amendment of its provisions is valid unless made in writing and signed by both parties.

SCOPE OF WORK

HSI agrees to perform for the OWNER services as are specified in the ___ Scope of Services dated ___ *(Attachment A)* and so designated for fair compensation.

COMPENSATION

The Owner agrees to pay HSI a cost not to exceed $_____ for the completion of tasks contained in the ___ Scope of Services dated ___ *(Attachment A)*. Compensation

shall be on a time and material basis. HSI shall prepare and submit to the Owner an itemized invoice reflecting the number of hours worked in the performance of this Agreement as well as the specific service associated with each hour of work or fraction thereof. The total amount of such invoice shall be paid by the Owner within 30 days after receipt of said invoice. In the event an invoice is not paid within 30 days after receipt of invoice HSI is entitled to a monthly interest fee of 1.5% or 18% per annum. HSI reserves the right to stop work effort due to non-payment of invoices. Any additional work not part of this Agreement will be Out of Scope and will be billed on a time and materials basis according to HSI's current Schedule of Fees *(Attachment B)*.

It is understood that the Owner shall pay a retainer of $____ to HSI at the time this Services Agreement is signed and returned to HSI. The retainer shall be in effect until such time that HSI has completed and has received compensation for ___% of tasks contained in the ___ Scope of Services dated ____ *(Attachment A)*. The amount due HSI on subsequent invoices shall be reduced until such time that the retained amount has been reduced to zero. Any unused retainer shall be refunded to OWNER.

RELATIONSHIP OF PARTIES

HSI shall perform the services hereunder as an independent contractor in providing a high quality work product that meets or exceeds industry standards. The Owner is interested only in the product or results of HSI's services and the control of all work including work performed by any subcontractors of HSI will lie solely with HSI.

It is further understood that HSI is free to subcontract for special services with other entities or persons while performing under this Agreement.

OWNERSHIP OF WORK PRODUCT

All drawings, plans, specifications, programs and other documents, including those in electronic form, prepared by HSI in the performance of tasks contained in the ___ Scope of Services dated ___ *(Attachment A)* shall be the property of OWNER. Such documents are not intended or represented to be suitable for reuse by OWNER or any other on any other project. Any such reuse without specific written verification and adaptation by HSI for the specific purpose intended will be at the reuser's sole risk and without liability or legal exposure to HSI.

CONFIDENTIAL INFORMATION

It may be necessary for the performance of this Agreement for the OWNER to disclose Confidential Information. HSI, its employees and agents, shall maintain strict confidence of all Confidential Information disclosed by the OWNER and shall limit access of Confidential Information to the OWNERS officers, employees and agents who have need of the information in connection with the performance and furtherance of this Agreement.

Confidential Information shall refer to information or material which is proprietary and sensitive to the OWNER, entity related to the OWNER or any entity doing business with the OWNER. These terms shall remain in effect unless required to divulge it pursuant to law, it is the rightful possession of HSI from a source other than the OWNER, or until it becomes part of the public domain.

DURATION OF AGREEMENT

It is understood that this Agreement is to remain in effect for a period of time necessary to complete the services contained in the ___ Scope of Services dated ___ *(Attachment A)*. Termination of this Agreement prior to such completion date shall be effected upon 30 day's written notice by either party. The OWNER agrees to pay HSI the actual costs of all services rendered prior to the date of effective termination. Should this Agreement be terminated prior to the normal completion of tasks contained in the ___ Scope of Services dated ___ *(Attachment A)* HSI shall be compensated for reasonable rescheduling and shut-down costs.

INSURANCE

HSI shall carry and maintain for the life of this Agreement and for a period of two (2) years following the completion of this Agreement insurance with the minimum limits of liability in not less than the following amounts:

Comprehensive General Liability insurance including contractual liability and products/completer operations liability with a Combined Single Limit of $2,000,000 per occurrence, with a general aggregate of $2,000,000.

Comprehensive Auto Liability insurance with a Combined Single Limit of $1,000,000 per occurrence

Workers Compensation with Employers Liability Limits of $1,000,000/$1,000,000/$1,000,000

Professional Liability insurance of $2,000,000 per claim and $2,000,000 in general aggregate

The OWNER shall be named as additional insured on above policies excluding Workers Compensation and shall be provided current certificates of insurance

evidencing above listed coverages and containing a 30-day notice of cancellation provision.

LIABILITY/INDEMNIFICATION

The OWNER shall indemnify HSI against any liability or loss and against all claims and actions arising out of damage, injury or death, to persons or property, caused by any intentionally wrongful or negligent act or failure to act by the OWNER in connection with the performance of this Agreement. Such indemnification shall include, though not be limited to, all reasonable cost incurred by HSI in defending against such claims or actions.

HSI shall indemnify the OWNER against any liability or loss and against all claims and actions arising out of damage, injury or death, to persons or property, caused by any intentionally wrongful or negligent act or failure to act by HSI in connection with the performance of this Agreement. Such indemnification shall include, though not be limited to, all reasonable cost incurred by the OWNER in defending against such claims or actions.

All indemnities herein shall be based upon Comparative Negligence principles.

LIMITED WARRANTY

HSI shall perform its services in a good and workmanlike manner, in conformity with the standard of care in the hydrologic/geologic industry. It is understood that HSI does not warranty any specific results of any kind.

State of Arizona
BOARD OF TECHNICAL REGISTRATION

1110 W. Washington • Suite 240 • Phoenix, Arizona 85007 • (602) 364-4930 • FAX: (602) 364-4931 • www.azbtr.gov

April 21, 2009

VIA FACSIMILE: 480-517-9049

HydroSystems, Inc.
9831 S. 51st St., Ste. E-122
Phoenix, AZ 85044
Attn: Peggy Olsen

Re: Gary G. Small, Geologist #13119

Dear Ms. Olsen:

On April 21, 2009 a check of our records show no pending investigations and no Disciplinary Actions have been taken against Gary G. Small, Geologist #13119.

Kathryn I. Fuller
Investigations Manager

ARIZONA STATE BOARD OF TECHNICAL REGISTRATION
1110 W. WASHINGTON #240, PHOENIX ARIZONA 85007
TEL. # 602-364-4930

THIS IS TO CERTIFY THAT:
GARY G SMALL
2101 E PAGE AVE
GILBERT AZ 85234

IS A GEOLOGIST

CERTIFICATE/REGISTRATION NO. 13119

EXPIRATION DATE: 06/30/2010

STATE OF ARIZONA
BOARD OF TECHNICAL REGISTRATION

■ FIRM REGISTRATION ■

FIRM NAME
HydroSystems, Inc.

FIRM REGISTRATION NO.: 10260-0

FIRM ADDRESS
9831 S. 51st Street, Suite E-122
Phoenix, AZ 85044

EXPIRES: March 31, 2010

SERVICES OFFERED
Geology

RONALD W DALRYMPLE
EXECUTIVE DIRECTOR
FOR THE BOARD

ACORD. CERTIFICATE OF LIABILITY INSURANCE

OP ID: MD
HYDRO-3

DATE (MM/DD/YYYY): 04/21/09

PRODUCER
Professional Underwriters of
Arizona, Inc.
P.O. Box 5419
Scottsdale AZ 85261-5419
Phone: 480-483-0440 Fax: 480-948-7752

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED
HydroSystems, Inc.
9831 S. 51st St., Ste E-122
Phoenix AZ 85044

INSURERS AFFORDING COVERAGE		NAIC #
INSURER A:	Endurance American Specialty	41718
INSURER B:	Travelers Indemnity Co of CT	25682
INSURER C:		
INSURER D:		
INSURER E:		

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A		GENERAL LIABILITY				EACH OCCURRENCE	$ 2,000,000
		X COMMERCIAL GENERAL LIABILITY	ECC101004364	12/04/08	12/04/09	DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 50,000
		CLAIMS MADE X OCCUR				MED EXP (Any one person)	$ 5,000
		X Contractual Liab				PERSONAL & ADV INJURY	$ 2,000,000
						GENERAL AGGREGATE	$ 2,000,000
		GEN'L AGGREGATE LIMIT APPLIES PER:				PRODUCTS - COMP/OP AGG	$ 2,000,000
		POLICY PRO-JECT LOC					
		AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT (Ea accident)	$
		ANY AUTO				BODILY INJURY (Per person)	$
		ALL OWNED AUTOS				BODILY INJURY (Per accident)	$
		SCHEDULED AUTOS				PROPERTY DAMAGE (Per accident)	$
		HIRED AUTOS					
		NON-OWNED AUTOS					
		GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$
		ANY AUTO				OTHER THAN AUTO ONLY: EA ACC	$
						AGG	$
A		EXCESS/UMBRELLA LIABILITY				EACH OCCURRENCE	$ 1,000,000
		X OCCUR CLAIMS MADE	FXS7000735	12/04/08	12/04/09	AGGREGATE	$ 1,000,000
		DEDUCTIBLE					$
		RETENTION $					$
B		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY				X WC STATUTORY LIMITS / OTHER	
		ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED?	XEUB5863Y440	05/01/08	05/01/09	E.L. EACH ACCIDENT	$ 1,000,000
		If yes, describe under SPECIAL PROVISIONS below				E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
						E.L. DISEASE - POLICY LIMIT	$ 1,000,000
A		OTHER					
		Professional Liab	ECC101004364	12/04/08	12/04/09	Per Claim	$2,000,000
		Retro:04/01/94				Aggregate	$2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

*Except 10 days nonpayment

CERTIFICATE HOLDER

PROOF01

PROOF OF INSURANCE
XXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXX AZ

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30* DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE: Jeffrey D Lenick

© ACORD CORPORATION 1988

CERTIFICATE OF INSURANCE

SUCH INSURANCE AS RESPECTS THE INTEREST OF THE CERTIFICATE HOLDER NAMED BELOW WILL NOT BE CANCELED OR OTHERWISE TERMINATED WITHOUT GIVING 10 DAYS PRIOR WRITTEN NOTICE TO THE CERTIFICATE HOLDER, BUT IN NO EVENT SHALL THIS CERTIFICATE BE VALID MORE THAN 30 DAYS FROM THE DATE WRITTEN. THIS CERTIFICATE OF INSURANCE DOES NOT CHANGE THE COVERAGE PROVIDED BY ANY POLICY DESCRIBED BELOW.

This certifies that:
- ☒ STATE FARM MUTUAL AUTOMOBILE INSURANCE COMPANY of Bloomington, Illinois
- ☐ STATE FARM FIRE AND CASUALTY COMPANY of Bloomington, Illinois
- ☐ STATE FARM COUNTY MUTUAL INSURANCE COMPANY OF TEXAS of Dallas, Texas , or
- ☐ STATE FARM INDEMNITY COMPANY of Bloomington, Illinois

has coverage in force for the following Named Insured as shown below:

NAMED INSURED: HYDRO SYSTEMS INC

ADDRESS OF NAMED INSURED: 9831 S 51st St, Ste E122 Phoenix, AZ 85044

POLICY NUMBER	077-8384-E04-03	010-2225-B21-03	028-7662-F06-03	086 1475-E17-03
EFFECTIVE DATE OF POLICY	5/4/09-11/4/09	2/21/09-8/21/09	6/6/08-12/6/09	5/17/09-11/17/09
DESCRIPTION OF VEHICLE (including VIN)	05 GMC ENVOY	00 FORD F250 SD	01 FORD F250 SD	06 Ford F250 SD
LIABILITY COVERAGE	☒ YES ☐ NO	☒ YES ☐ NO	☒ YES ☐ NO	☒ YES ☐ NO
LIMITS OF LIABILITY a. Bodily Injury Each Person				
Each Accident				
b. Property Damage Each Accident				
c. Bodily Injury & Property Damage Single Limit Each Accident	1 MILLION	1 MILLION	1 MILLION	1 MILLION
PHYSICAL DAMAGE COVERAGES a. Comprehensive	☒ YES ☐ NO $ 2000 Deductible	☒ YES ☐ NO $ 2000 Deductible	☒ YES ☐ NO $ 2000 Deductible	☒ YES ☐ NO $ 2000 Deductible
b. Collision	☒ YES ☐ NO $ 2000 Deductible	☒ YES ☐ NO $ 2000 Deductible	☒ YES ☐ NO $ 2000 Deductible	☒ YES ☐ NO $ 2000 Deductible
EMPLOYERS NON-OWNED CAR LIABILITY COVERAGE	☒ YES ☐ NO	☒ YES ☐ NO	☒ YES ☐ NO	☒ YES ☐ NO
HIRED CAR LIABILITY COVERAGE	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO
FLEET - COVERAGE FOR ALL OWNED AND LICENSED MOTOR VEHICLES	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO

Scott Knudten — AGENT — 1704 — 04/20/09

Signature of Authorized Representative — Title — Agent's Code Number — Date

Name and Address of Certificate Holder	Name and Address of Agent
ADDITIONAL INSUREDS:	SCOTT KNUDTEN 14702 N FRANK LLOYD WRIGHT BLVD SCOTTSDALE, AZ 85260

INTERNAL STATE FARM USE ONLY: ☐ Request permanent Certificate of Insurance for liability coverage.
☐ Request Certificate Holder to be added as an Additional Insured.

122429.2 Rev. 06-10-2004

04/21/2009 15:08 4807678959 STATE FARM INSURANCE PAGE 01/01

Phillip M. Paski

27+ YEARS OF EXPERIENCE · WATER RESOURCE INVESTIGATIONS · WELL SITE EVALUATION STUDIES · WATER PRODUCTION WELL DESIGN · FLOW CHARACTERIZATION · APPLICATION OF SURFACE GEOPHYSICAL TECHNIQUES · ENVIRONMENTAL PERMITTING

OTHER WORK EXPERIENCE:

Parsons Engineering Science, Phoenix, Arizona **1994-1999**

Project Hydrogeologist: Conducted water resources and environmental site characterization studies; quality assurance and quality control (QA/QC) review of draft and final reports prior to submittal; analyzing water quality, geologic, and groundwater level data; developing and managing various databases; preparation of technical specifications for monitor wells, soil vapor extraction wells, and soil vapor monitor points; oversight of drilling and well installation at environmental and Department of Defense (DOD) sites; subsurface characterization from logging of drill cuttings; sampling and monitoring of remediation systems; writing water resource and environmental reports; and providing oversight for subsurface characterization studies performed by subcontractors.

Kleinfelder, Inc., Phoenix, Arizona **1991-1994**

Project Hydrogeologist: Provided quality assurance and quality control (QA/QC) review of groundwater and environmental reports; design, implementation, and analysis of aquifer testing for groundwater resource studies and developing design parameters for groundwater remediation equipment at LUST sites; oversight of project professionals and contractors for water production well drilling; evaluation and interpretation of field data for groundwater flow direction, gradient, and groundwater quality; preparation of work plans, drilling and testing technical specifications, well design, schedules, and project budgets; application for various regulatory permits; quarterly reporting of groundwater remediation measures at LUST sites; and writing hydrogeologic and environmental characterization reports.

Cella Barr Associates, Phoenix, Arizona **1982-1991**

Project Hydrogeologist: Collected and evaluated geologic and groundwater data for groundwater resource and water adequacy studies; preparation of technical specifications and design figures for water production and monitor wells; overseeing well drilling; logging cuttings from drilling; preparing geologic cross-sections and hydrographs; performing aquifer testing and data analysis; review and analysis of water quality data; estimating groundwater decline and recharge rates; modeling and projecting impacts of groundwater removal and recharge; conducting regional groundwater basin surveys; writing of water resource reports detailing hydrogeologic literature research and field testing results; and surface water HEC-2 modeling for FEMA flood control studies.

Phillip M. Paski

27+ YEARS OF EXPERIENCE · WATER RESOURCE INVESTIGATIONS · WELL SITE EVALUATION STUDIES · WATER PRODUCTION WELL DESIGN · FLOW CHARACTERIZATION · APPLICATION OF SURFACE GEOPHYSICAL TECHNIQUES · ENVIRONMENTAL PERMITTING

EDUCATION:

Bachelor of Science (Environmental Science), Grand Canyon College, 1981

PROFESSIONAL REGISTRATION:

Geologist: State of Arizona No. 40818, 2004

Certified Ground Water Professional No. 438

PROFESSIONAL ACTIVITIES

40 Hour Hazardous Waste Operations & Emergency Response

8 Hour Hazardous Refresher

Hazardous Waste Operations & Emergency Response Supervisory Instruction

First Aid & CPR Training

CLASSES & SEMINARS:

Leadership Conferences

Leadership Training Resource Associates Corp, 2007 (Phoenix, AZ)

PROFESSIONAL EXPERIENCE:

HydroSystems, Inc., Phoenix, Arizona 1999 to Present

Senior Hydrogeologist: performs a variety of hydrogeoloic services in the office and in the field with clients and specialized contractors for successful completion of projects. Office services include project management, scope of services, budgets, schedules, data analysis, writing completion reports, permitting, and response to agency comments. Field services include selection of appropriate and qualified contractors, activity oversight, documentation, and applicable field measurements. Representative contractor oversight includes surface geophysical surveys, deep well drilling, pump installation, and downhole geophysical logging services.

SPECIFIC PROJECT EXPERIENCE:

- **City of Flagstaff:** Project Manager for several well site evaluation studies using the surfaced based CSAMT geophysical survey method and subsequent oversight for the design, drilling and testing of three water production wells drilled beyond 2,500 feet. The first well tested at 1,340 gpm in an area generally known for low water production and difficult drilling.

- **Far West, Yuma, Arizona:** Project Manager for Aquifer Protection Permit (APP) and water resource projects. Assisted the client and project engineer with the hydrogeologic component parts and responses for APP's required at several small capacity wastewater treatment plants. Other work includes recharge investigations for treated effluent disposal and water production well evaluations.

- **Salt River Project:** New River-Agua Fria Underground Storage Project (NAUSP). Mr. Paski assisted SRP project professionals with characterization studies and permit services for this project. This included hydrogeologic data research, soil boring and monitor well drilling, permit documentation for submittal to ADWR, and response to agency comments. This project is actively recharging treated effluent and Central Arizona Project water in the *West Salt River Valley.*

- **Red Gap Ranch:** Directed field activities including CSAMT surface geophysical survey, well drilling, aquifer testing, and water sampling of Red Gap Ranch, Navajo, and Hopi owned wells. The two production wells produced in excess of 800 gpm in an area previously unknown for groundwater resources.

- **Bellemont, Arizona:** Project Manager for CSAMT well site evaluation studies, design, drilling, and testing of two water production wells. This project included drilling of the first well using the dual rotary technique in this part of the Colorado Plateau. The dual rotary drilled well produced over 370 gpm during a seven day aquifer test.

Gary G. Small

30+ YEARS OF EXPERIENCE · GROUNDWATER FLOW · AQUIFER RECHARGE · WATER QUALITY EVALUATION · WELL-DRILLING TECHNOLOGY

WELL REHABILITATION · ENVIRONMENTAL PERMITTING

EDUCATION:

Master of Science (Hydrology), University of Arizona, 1973

Bachelor of Science (Geology), Ft. Hays Kansas State University, 1970

PROFESSIONAL REGISTRATION:

Geologist: State of Arizona No. 13119, 1981

Hydrologist: American Institute of Hydrology No. 997, 1993

Certified Environmental Consultant No. 7748, 1991

PROFESSIONAL SOCIETIES & COMMITTEES:

Member of 9 national professional Societies and Committees

CLASSES & SEMINARS:

Recharge Symposiums

Participated in 20 Arizona Recharge Symposiums, 1978-Present (Tucson & Phoenix, AZ)

Participated in Groundwater Resources Association of California – Artificial Recharge Nexus of Quantity and Quality, March 2008 (CA)

Water Conferences

Nevada Water Conference, November 1999 (Tahoe, NV)

Geological Society of America Conference, Nov 2000 (Reno, NV)

Leadership Conferences

Leadership Training Resource Associates Corp, 2007 (Phoenix, AZ)

PSMJ Resources: A/E Principals Boot Camp, Nov 2001 (Phoenix, AZ)

AWARDS:

Arizona Hydrological Society Lifetime Achievement 2004

PROFESSIONAL EXPERIENCE:

HydroSystems, Inc., Phoenix, Arizona 1994 to Present

President: Provides company leadership, project supervision and oversight, and technical services for a firm specializing in hydrogeological investigations, groundwater recharge, well design, well drilling technology, and environmental assessments. Is a leader in water well and injection well design for municipal and private water systems.

SPECIFIC PROJECT EXPERIENCE:

- **City of Scottsdale Water Campus Project:** Performed and managed the hydrogeologic investigation of the proposed site. Implemented a conceptual plan for utilizing vadose zone recharge well technology for recharging high quality reclaimed water. Development of state-of-the-art recharge well designs to maximize efficiency and cost effectiveness. Completed Underground Storage Facility permitting to include ASR wells. Tested ASR wells to determine recharge capacity.

- **Vidler Water Company Full Scale Recharge Project:** Performed and managed the hydrogeologic site evaluation, feasibility of recharge, recharge method, the implementation of the facility design, construction and testing of 120 acres of recharge basins plus 23 vadose zone recharge wells. Performed pilot & full-scale permitting, as well as one year of full-scale facility operation.

- **IWDS Recharge and Recovery Facility:** Managed hydrogeologic evaluation, sited, designed, permitted and constructed six recovery wells, nine vadose zone recharge wells and converted two recovery wells into ASR wells. Develop Full-Scale USF & WS permits plus perform a computer impact analysis.

- **City of Scottsdale Aquifer Storage & Recovery Demonstration Project:** Modify existing USF and WS permits to include four existing ASR wells. Performed a recharge impact analysis, designed, permitted and constructed five monitor wells. Designed and bid injection equipment for two ASR wells plus performed two injection tests and document the results.

- **Lake Havasu City Recharge Facility:** Managed the hydrogeologic evaluation, permitting, oversight of the design, construction and testing of four vadose zone recharge wells.

- **City of Surprise:** Managed future hydrogeologic and recharge evaluations for design in preparation of the construction of 32+ vadose zone recharge wells for the purpose of recharging high quality reclaimed water. The project included the design and construction of two monitor wells and support to the City on USF and APP permitting requirements. Recharge testing will be conducted on the vadose zone recharge wells to determine the hydrogeologic parameters and incorporate data in a groundwater mounding analysis. Provide construction oversight and operational support to City staff and train them in vadose zone recharge well operation for this project.

- **City of Glendale:** Managed the hydrogeologic assessment in support of the APP modification to expand recharge at the Arrowhead Ranch Water Reclamation Facility. The report covered hydrogeologic, and water quality at a regional and a local scale as well as a modeling of the recharge mound.

- **Fountain Hills Sanitary District:** Managed and performed permitting, design and construction of five ASR wells and five monitor wells. Other activities included the investigation and the construction of a computer model as an analytical tool for use in evaluating artificial recharge at the Fountain Hills Recharge Facility within Fountain Hills Sub-Basin. Evaluated future groundwater management planning in the Fountain Hills Sub-Basin and recovery alternatives for groundwater stored at the Fountain Hills Recharge Facility.

OTHER WORK EXPERIENCE:

Hydro-Analysis, Inc., Tempe, Arizona 1992-1994

Principal, Project Manager: Provided oversight and technical services for state-of-the-art computer analyses of geohydrological investigations including contaminant studies, groundwater and surface-water modeling, geo-statistical analysis, computer programming, computerized graphics, computerized animation, computerized mapping, water-well technology; and expert testimony.

Fluid Containment Enterprises, Gilbert, Arizona 1991-1994

Principal, President: Operated and provided oversight of a company specializing in tank tightness testing, environmental site assessments, and soil and groundwater remediation.

Salt River Project, Phoenix, Arizona 1974-1991

Manager, Environmental Services and Geohydrology Divisions: Served as the original Project Manager for the Granite Reef Underground Storage Project, and designed and supervised the construction and testing of 10 large diameter water supply wells to provide cooling water for the Coronado Generating Station (CGS), located in St. Johns, Arizona. Designed and supervised the construction and operation of small diameter monitor and neutron wells used for early warning detection of waste water seeping beneath the evaporation ponds located at the Navajo Generating Station, Page, Arizona.

Crystal Ault

2+ YEARS OF EXPERIENCE · HYDROLOGIC & GEOLOGIC INTERPRETATION · SAMPLE LOGGING · AQUIFER TESTING · DATA ANALYSIS · PROJECT SCHEDULING

· TECHNICAL/ADMINISTRATION INTERFACE · MARKETING PROPOSAL DEVELOPMENT · PERMITTING · POWERPOINT & GRAPHICAL PRESENTATIONS

EDUCATION:

Bachelor of Science (Geological Sciences), Arizona State University, 2006

CLASSES & SEMINARS:

AutoCAD 2007 Level 1

Water Well Performance Workshop, 2008

ISMAR6: 6th Annual International Symposium on Managed Aquifer Recharge, 2007

LEADERSHIP CONFERENCES

Leadership Training Resource Associates Corp, 2008 (Phoenix, AZ)

COMPUTER SKILLS:

AutoCAD

WellCAD

Access

Adobe Illustrator, Photoshop & Distiller

Microsoft Office

PROFESSIONAL EXPERIENCE:

HydroSystems, Inc., Phoenix, Arizona 2007 to Present

Hydrologist I: Provides professional support both in the field and in the office on a variety of projects. Field work includes groundwater sampling, aquifer tests, geologic logging, and oversight of well drilling and well construction. Office work includes report writing, figure creation, report production, PowerPoint presentations, quality control, database management, and data evaluation and interpretation. Mrs. Ault also maintains project schedules for Project Managers, and updates project performance reports for the business administration invoices. Maintains HSI's Statement of Qualifications and develops proposals for potential projects development and tracking, and business administration.

SPECIFIC PROJECT EXPERIENCE:

- **CDM Bullhead City:** Developed monitor well design, and technical specifications. After the monitor well was constructed and tested, the information was analyzed and compiled into a well completion report.
- **Gila River Indian Community:** Provided field oversight for pump test and new source groundwater sampling.
- **Fountain Hills Recharge Sanitary District:** Co-authored a research paper that evaluated and identified the factors affecting the performance of Fountain Hills's ASR wells as well as recommended strategies to improve performance.
- **City of Surprise:** Supported the preparation of an Underground Storage Facility permit application by obtaining information from the Arizona Department of Water Resources database, performed data analysis of hydrographs, figure development using AutoCAD, and ordered an Environmental Assessment and Flood Use Maps.
- **Town of Gilbert:** Provided field oversight during drilling, and well development, logged cuttings and analyzed geophysical logs. Assisted the Project Manager with the completion report for three production wells and one recovery well by writing sections of the report, compiling sections from other staff members, quality checking figures, tables and give weekly progress updates. Prepared the appropriate permits for the drilling of the new wells, and the abandonment of one well.
- **City of Glendale Arrowhead Recharge Facility:** Developed monitor well design and technical specifications.
- **Town of Payson:** Developed a concept groundwater budget that was included in the Hydrogeologic Summary Report for the Mogollon Rim Water Resources Management Study which is a regional assessment of water resources and water use alternatives for the growing communities along the Mogollon Rim.
- **Southwest Public Power Resources Group, LLC:** Assisted in a groundwater rights analysis identifying water right type, location, volume, and conversion potential for the purposes of determining groundwater availability.

HSI HydroSystems, Inc.

Sheila Kay Ehlers

20+ YEARS OF EXPERIENCE · WATER RESOURCES MANAGEMENT · GROUNDWATER HYDROGEOLOGY · POLICY ANALYSIS · PLANNING · PERMITTING

OTHER WORK EXPERIENCE:

Arizona Department of Water Resources, Phoenix, Arizona 1988-2000

Water Resources Supervisor/Unit Manager (Phoenix Active Management Area (AMA)): Provided direction for the implementation and administration of conservation, augmentation, and grant programs within the Phoenix AMA. Required knowledge of Arizona Revised Statutes, including groundwater code, Central Arizona Groundwater Replenishment laws, Arizona Water Banking Authority, and rules including the Arizona Administrative Code, which includes the Assured Water Supply Rules. Led the Phoenix AMA in the development of the Third Management Plan Program as it related to augmentation and recharge. Presented, interpreted, explained, and defended water resource management policies, programs, regulations, and plans to representatives of regulated businesses, community leaders, and the public.

Water Resources Specialist III, Groundwater Management Division: Led water resource planning and management as it related to industrial water use and the recharge of water supplies within the Phoenix AMA. Conducted pre-application meetings with community officials, technical staff, and the public for underground water storage facilities and reviewed applications when submitted. Implemented new legislative programs. Conducted water rights analysis.

Hydrologist, Hydrology Division: Provided hydrologic support for the San Pedro Hydrographic Survey Report. Wrote technical reports regarding surface water studies for the Statewide Wide Water Assessment. Analyzed U.S. Geologic Survey gauging station data for surface water studies. Evaluated studies for water supply of municipal, industrial, and agricultural development. Evaluated applications for assured and adequate water supply.

Water Resources Specialist I, Adjudication Division: Conducted irrigation, stockpond, domestic, and industrial water use investigations for surface water claimants in the Salt and Verde Watersheds using aerial photography and topographic map interpretation. Researched and analyzed data to write reports for the Salt River adjudication hydrographic survey report.

Sheila Kay Ehlers

20+ YEARS OF EXPERIENCE · WATER RESOURCES MANAGEMENT · GROUNDWATER HYDROGEOLOGY · POLICY ANALYSIS · PLANNING · PERMITTING

EDUCATION:

Bachelor of Science (Geology), University of Oklahoma, 1984

CLASSES & SEMINARS:

Water Rights Sales and Transfers as a Water Management Tool, 2007 (Phoenix, AZ)

West Valley Water Conference, 2003 (Glendale, AZ)

11th Biennial Symposium on Groundwater Recharge, 2003 (Tempe, AZ)

Managing Multiple Projects, Objectives & Deadlines, SkillPath Seminars, 2003

Arizona Hydrological Society, Seventh Annual Symposium, 1994

Arizona Hydrological Society, Eighth Annual Symposium, 1995

8th Biennial Symposium on the Artificial Recharge of Groundwater, 1997

WESTCAPS, 1999 West Valley Water Conference

Leadership Conferences

Leadership Training Resource Associates Corp, 2007 (Phoenix, Arizona)

PROFESSIONAL EXPERIENCE:

HydroSystems, Inc., Phoenix, Arizona — 2000 to Present

Senior Water Resources Analyst: Provides the team with valuable experience in water rights and water resources management of Arizona. Assist in obtaining a range of permits including; Aquifer Protection, Underground Storage Facility, Water Storage, Recovery Well permits, Assured and Adequate Water Supply, hydrologic testing, approval to construct and other ADWR permits. Prepare Scope of Work, project proposals, cost estimates and schedules.

SPECIFIC PROJECT EXPERIENCE:

- **Green Valley Water Improvement District:** Assisted in amending District master plan to include an evaluation of becoming a designated water provider and impacts on the Districts existing and new customers.
- **Buckeye Development LLC:** Project Coordinator for proposed development in Buckeye. Project required well drilling, testing, water quality analysis, and assured water supply and CAGRD application development.
- **Arizona Department of Environmental Quality:** Oversee hydrologic report review as an agent of ADEQ of an expedited APP permit amendment for the Town of Sahuarita.
- **City of Scottsdale Water Campus - Aquifer Storage and Recovery Project:** Oversight and development of modification to the Water Campus permit to add aquifer storage and recovery wells (aka injection wells) to the existing Underground Storage Facility Permit.
- **City of Prescott Recharge Facility:** Project Coordination for the preparation of a modified USF permit application including the hydrologic report.
- **Lake Havasu City:** Project Coordinator for the Aquifer Protection Permitting of the Mulberry, and the North Regional WWTP, and the South well field recharge facility.
- ***Private Clients near Vernon, Arizona:*** Project Coordinator for the preparation of the Water Reports for two proposed developments.
- **City of Surprise:** Project Coordinator for the APP and USF Permit applications for SPA-1 WWTP expansion.

Tomas C. Goode

10+ YEARS OF EXPERIENCE · HYDROGEOLOGIC ASSESSMENTS · THREE-DIMENSIONAL GROUND-WATER FLOW MODELING · GEOPHYSICAL DATA ANALYSIS
WELL DRILLING OPERATIONS · HYDROLOGIC DATA ANALYSIS

EDUCATION:

Ph.D. Candidate (Hydrology), University of Arizona, ABD

Masters of Science (Hydrology), University of Arizona, 2000

Bachelor of Science (Environmental Geoscience and History), Weber State University, 1998

PROFESSIONAL REGISTRATION:

Geologist: State of Arizona No. 43616, 2005

CLASSES & SEMINARS:

LEADERSHIP CONFERENCES

Leadership Training Resource Associates Corp, 2007 (Phoenix, AZ)

COMPUTER SKILLS:

Groundwater Modeling System (GMS), Visual Modflow, Groundwater Vistas

MT3D, MODPATH

SOLMINEQ.88, PHREEQC

THwells, Surfer

ArcGIS, Arc Info, ArcView, Spatial Analyst

Microsoft Office

PROFESSIONAL EXPERIENCE:

HydroSystems, Inc., Phoenix, Arizona — 2001 to Present

Hydrogeologist: Expertise in groundwater modeling, GIS, and the use of geophysical analysis to asses local and regional hydrogeologic conditions. Responsibilities also include groundwater well design, permitting, drilling, construction oversight, and testing.

SPECIFIC PROJECT EXPERIENCE:

- **Red Gap Ranch LLC, Hydrologic Study & Groundwater Flow Model:** Responsibilities included aquifer testing oversight and data analysis, for multiple production wells on the Colorado Plateau. The results were correlated to geological and geophysical surveys (CSAMT) to detail subsurface aquifer units. Developed regional ground-water model to evaluate water development on Red Gap Ranch.

- **SRP Groundwater Modeling:** Updated the Arizona Department of Water Resources (ADWR) groundwater flow model of the Phoenix AMA, focusing on the West Salt River Valley. Simulated artificial recharge from all permitted recharge facilities in the West SRV to determine potential impacts.

- **City of Phoenix – Cave Creek WRP Recharge Facility:** Managed drilling and construction for seven vadose zone recharge wells, a deep exploratory borehole, two monitor wells and two nested piezometer wells. Also responsible for startup testing and evaluation of the Recharge Facility.

- **Town of Gilbert - Direct System & Recovery Wells:** Responsible for permitting and construction of four production wells and the abandonment of an existing well for the Town of Gilbert. Developed technical specifications for three potable water supply wells and one non-potable irrigation supply well. Managed and provided oversight for well drilling, construction, and testing operations at each of the production wells specifically including: zonal water quality sampling, geologic logging, aquifer testing and analysis, New Source water quality sampling, and the development of comprehensive completion reports.

- **Bureau of Reclamation - Mogollon Rim Water Resource Management Study:** The Study is an appraisal level evaluation of regional water resources and water use alternatives for the growing communities along the Mogollon Rim in Gila County. Responsibilities included conceptualizing the hydrogeologic system and integrating work perform previously in the Study (geological mapping, isotopic geochemistry of springs and wells in the area, general water chemistry analyses) through a GIS interface. Prepared a hydrogeologic summary document for the Study as an information baseline for water resources planning.

HSI HydroSystems Inc.

Tomas C. Goode

10+ YEARS OF EXPERIENCE · HYDROGEOLOGIC ASSESSMENTS · THREE-DIMENSIONAL GROUND-WATER FLOW MODELING · SURFACE GEOPHYSICAL ANALYSIS · WELL DRILLING OPERATIONS · HYDROLOGIC DATA ANALYSIS

- **North Scottsdale Aquifer Storage & Recovery Project:** Conducted groundwater modeling analyses for the north Scottsdale area within the Cave Creek-Carefree Sub-basin. Evaluated long term recharge and pumping and their effects on the Carefree sub-basin. Responsible for drilling oversight and testing of five (5) water production wells. Developed an optimized pumping scheme of well field operation for the IWDS and the City of Scottsdale

- **Fountain Hills Sanitary District Recharge Facility:** Developed a numerical groundwater flow model of the Fountain Hills Sub-basin. This model was used to support the full scale Underground Storage Facility (USF) permit application for the Fountain Hills Sanitary District Aquifer Storage and Recovery facility and for the evaluation of long term impacts due to ASR well operation.

- **Newland Homes & City of Goodyear Water Resources Implementation Plan:** Responsible for the completion of a water resources implementation planning document. This included the development of a comprehensive well inventory and water quality database for the Newland and Sun MP properties in Rainbow Valley. The database included well site coordinates, depth, diameter, water level, date drilled, water quality parameters, geophysical logs, video logging, and well operation status. Responsibilities also included aquifer testing oversight and data analysis at existing wells and development of numerical model projections of potential impacts from groundwater development and artificial recharge within Rainbow Valley.

- **City of Scottsdale Water Campus Monitor Wells:** Developed technical specifications and responsible for drilling oversight and testing for five (5) monitor wells at the City of Scottsdale's Water Campus. The monitor wells were drilled using both direct mud rotary and air rotary casing hammer (ARCH) methods, and included core sampling for determination of lithologic characteristics within the aquifer beneath the Water Campus recharge facility.

- **Vidler Water Company - Coyote Springs:** Responsible for reviewing a numerical groundwater modeling report of the Coyote Springs Valley, NV for Vidler Water Company. The model results were disputed as part of the review process by the Nevada State Engineer to approve requested water rights. Attended hearings before the Nevada State Engineer and guided attorney questions before the State Engineer. Assisted in preparing testimony regarding groundwater modeling and water resources evaluation.

OTHER WORK EXPERIENCE:

University of Arizona, Tucson, Arizona 1999-2000

Research Assistant: Thesis research consisted of creating a regional scale groundwater model for the Upper San Pedro Basin, AZ. Conceptual model construction utilizing GIS technology, primarily ArcView and Spatial Analyst, in order to delineate boundary conditions and establish other important hydrogeologic zones. Numerical analysis of the conceptual model employs the use of MODFLOW and GMS modeling packages. Research conducted with the Department of Defense, Harvard University, and Desert Research Institute and *in association with representatives from the USGS and the ADWR.*

HSI Hydrosystems, Inc.

Jesús Gastélum

12+ YEARS OF EXPERIENCE · WATER RESOURCE MODELING · WATER RESOURCE PLANNING, POLICY, AND ECONOMICS

EDUCATION:

Ph.D. (Hydrology & Water Resources), University of Arizona with minor in Agricultural & Resource Economics, 2006

Master in Engineering (Oriented to Water resources Planning), National Autonomous University of Mexico, 2000

Bachelors Degree (Civil Engineering), Autonomous University of Sinaloa, 1993

CLASSES & SEMINARS:

ISMAR6: 6th Annual International Symposium on Managed Aquifer Recharge, 2007 (Phoenix, AZ)

LEADERSHIP CONFERENCES

Leadership Training Resource Associates Corp, 2007 (Phoenix, AZ)

COMPUTER SKILLS:

Groundwater Modeling System (GMS), & Visual Modflow

Stella and Powersim (System Dynamics)

THwells

GIS-ArcMap

Surfer

Access

SAS and R (Statistical Analysis Packages)

Windows and Microsoft Office

PROFESSIONAL EXPERIENCE:

HydroSystems, Inc., Phoenix, Arizona — 2006 to Present

Hydrologist: Experience in groundwater modeling using GMS-Modflow and ArcGIS. Assist and provide hydrogeologic and water resources support for various HSI projects. Expertise on the creation of System Dynamics Decision Support System models for water resources management.

SPECIFIC PROJECT EXPERIENCE:

- **Triple L Management – Sacramento Valley Model:** Assisting in the creation of the Groundwater Flow Model to evaluate the availability of groundwater in the Sacramento Basin. The assistance was focused on: data assemblage and preparation using ArcGIS; Hydrologic System characterization and conceptual Model Development; developing of the Numerical Groundwater Flow Model using the program Groundwater Modeling System (GMS) and Modflow; and performing the Steady State calibration of the numerical groundwater flow model.

- **Harquahala – Groundwater Model Update:** Using GIS-ArcMap and Spatial Analyst to assemble and georeference the pertinent hydrologic and geologic data required to update the numerical groundwater flow models. Creating or reviewing existing conceptual hydrologic and geologic models. Using GMS-Modflow to create and calibrate the numerical groundwater flow model. Performing sensitivity analysis and created a running model scenarios to assess the potential pumping and recharge impacts to the groundwater flow system using variable pumping rates and well locations.

- **Robson Quail Creek Project:** Assisting in different tasks such as: developing well technical specifications for a production well; Recharge impact analysis by creating different scenarios dedicated to evaluate the most optimum conjunctive use of production and injection wells using ThWells software; creation of groundwater contour levels using GMS and ArcGIS.

- **Lake Havasu City (AMEC):** Water Quality. Estimation of Alert Levels (ALs) and Aquifer Water Quality Levels (AWQLs) for the some Lake Havasu City's points of compliance wells using ADEQ's methodology as a part of the ambient monitoring of groundwater Program dedicated to compliance schedule for the aquifer protection permit (APP).

- **Fountain Hills Recharge Sanitary District:** Co-authored a research paper that evaluated and identified the factors affecting the performance of Fountain Hills's ASR wells as well as recommended strategies to improve performance.

- **City of Scottsdale Water Campus:** Participating in the evaluation of to identify the factors affecting the performance of some the City of Scottsdale's vadose zone wells. Based on the findings, some recommendations were provided to improve the wells' injection capacity.

HSI HydroSystems, Inc.

Jesús Gastélum

12+ YEARS OF EXPERIENCE · WATER RESOURCE MODELING · WATER RESOURCE PLANNING, POLICY, AND ECONOMICS

OTHER WORK EXPERIENCE:

Errol Montgomery and Associates, Inc., Tucson Arizona 2006-2006

Hydrologist: Assisting in the creation of a Decision Support System based on Excel-Powersim interface to improve water mining operation at the Toromocho mining project.

Metropolitan Domestic Water Improvement District, Tucson, Arizona. 2005-2006

Hydrology Technician Intern: Responsible for performing a variety of technical tasks related to collecting and analyzing groundwater quality and quantity data using Access, working with and calibration of sounders, using data loggers to retrieve data, estimating hydrographs, doing groundwater level maps using Surfer, doing aquifers and specific capacity tests, monitoring pumping tests and well drilling activities, creating GIS maps related, doing well impact analysis etc.

The University of Arizona, Tucson, Arizona 2002-2005

Graduate Research Assistant, SAHRA-Hydrology Department: Creation of Decision Support Systems (DSS) using Powersim of the Conchos Basin to identify strategies aimed to improve the basin's water resources management process. These DSS incorporate several key variables related with water management such as runoff, precipitation, evaporation, crop water demand, crop yield, agricultural production functions, reservoir storage levels and operations policies, groundwater submodels, groundwater-surface water interrelationships, water rights transfers, etc.

National Commission of Water, North Pacific Regional Administration 1995-2001

Water Resources Specialist: Responsible for integrating the water resources management and planning regional program in which there were defined the most important goals, strategies, and specific water resources projects to be implemented for each one of the water resources participants. This water resources management program was a holistic approach aimed to solve the water resources problems facing this state. Also, I was in charge of making the regional mass water balance, which is key tool on understanding current interrelationships between water supply and demand.

Gretchen Erwin

24+ YEARS OF EXPERIENCE · GROUNDWATER MODELING · HYDROGEOLOGIC INVESTIGATION · PERMITTING

WATER RESOURCES MANAGEMENT · PLANNING

EDUCATION:

Graduate Studies (Civil Engineering / Hydrology) Arizona State University, 1987

Bachelor of Science (Geology), Arizona State University, 1985

PROFESSIONAL REGISTRATION:

Geologist: State of Arizona No. 49069, 2008

CLASSES & SEMINARS:

NGWA Visual MODFLOW Course, 1997

Leadership Conferences:

Leadership Training Resource Associates Corp, 2007 (Phoenix, AZ)

COMPUTER SKILLS:

Groundwater Modeling Systems (GMS), Visual MODFLOW, WinPest

MODPATH, Target

ArcGIS, Surfer

THWells

AQTESOLV

Access, FoxPro

MS-Word, MS-Excel, WordPerfect, Quattro Pro, PowerPoint

PROFESSIONAL EXPERIENCE:

HydroSystems, Inc., Phoenix, Arizona 2007 to Present

Senior Hydrogeologist: Assists clients in obtaining a range of permits including: Aquifer Protection, Assured and Adequate Water Supply, Physical Availability Demonstration, hydrologic testing, Underground Storage Facility (USF), Water Storage (WS), and Recovery Well Permits as well as water right analysis. *Develops groundwater flow models on both regional and facility scales as* water management tools and in support of ADEQ and ADWR permitting.

SPECIFIC PROJECT EXPERIENCE:

- **Johnson Utilities Section 11 Wastewater Treatment Plant:** Developed a simplified MODFLOW groundwater flow model to assess the impacts of recharging effluent via basins in the ESRV. Prepared a hydrologic report in support of USF and WS Permit applications.
- **City of Prescott Recharge Facility:** Updated the existing ADWR/NAU MODFLOW Prescott AMA groundwater flow model to estimate the impacts of basin recharge. Prepared a modeling report in support of USF and WS Permit applications.
- **Johnson Utilities Pecan Recharge Facility:** Projected recharge impacts using THWells, an analytical model, in support of an USF and WS Permits.
- **Walton Development & Management:** Prepared hydrogeologic report assessing the feasibility of recharging within a proposed development.
- **Southwest Public Power Resources Group, LLC:** Conducted a groundwater rights analysis identifying water right type, location, volume, and conversion potential for the purposes of determining groundwater availability.
- **City of Surprise Recreational Center Recharge Facility:** Updated an existing regional MODFLOW groundwater flow to optimize recharge and recovery locations relevant to Glendale Landfill. Prepared a hydrologic report in support of USF and WS Permit applications.
- **Buckeye Development, LLC:** Developed a simplified MODFLOW groundwater flow model using GMS software to estimate the impacts of withdrawing groundwater in support of an Assured Water Supply application.
- **City of Glendale Arrowhead Recharge Facility:** Prepared well design and technical specifications for vadose zone recharge wells.
- **Greenfield Land Development, LLC:** Developed an aquifer test and monitoring program for the fractured-rock aquifer in support of an application for a Water Adequacy Report.

Gretchen Erwin

24+ YEARS OF EXPERIENCE · GROUNDWATER MODELING · HYDROGEOLOGIC INVESTIGATION · PERMITTING

WATER RESOURCES MANAGEMENT · PLANNING

OTHER WORK EXPERIENCE:

Arizona Department of Water Resources, Phoenix, Arizona 1988-2007

Hydrologist, Hydrology Division: Developed a groundwater flow model for the Santa Cruz AMA and provided technical support for the Assured Water Supply rules development process. Conducted field data collection and analysis in support of the groundwater model including streamflow and groundwater level measurements, river channel surveys, and boundary condition verification. Coordinated with State of Sonora, Mexico and the International Boundary and Water Commission for joint data sharing and collection. Author of the Groundwater Flow Model in the Santa Cruz AMA Microbasins, International Boundary to Nogales International Wastewater Treatment Plant, Santa Cruz County Arizona and co-authored the Santa Cruz AMA 1997–2001 Hydrologic Monitoring Report. Assisted in the Pinal AMA groundwater model update. Conducted water quality modeling for the North Indian Bend Wash Superfund Site.

Evaluated recharge and recovery applications for technical adequacy and project viability. Assisted in the preparation of a guideline manual for the preparation of applications. Provided technical support for a variety of projects including: Statewide Water Assessment, hydrographic survey reports, and other special studies.

Water Resources Specialist, Groundwater Management Division: Coordinated agency efforts to modify the Second Management Plan and a contributing author of the Non-Per-Capita Conservation Program Modification. Coordinator for the Third Management Plan Planning and Development Committee. Administered Conservation Assistance Grant Program for all AMAs.

Arizona State Land Department, Phoenix, Arizona 1985-1988

Water Resources Specialist, Hydrology/Natural Resource Division: Responsible for the management of all grandfathered groundwater rights on State Trust Land including annual reporting and severance and transfers.

Hydrologist, *Hydrology/Natural Resource Division:* Conducted inventory, field verification, and quantification of all water resources on State Trust Land.

Mario R. Lluria

40+ YEARS OF EXPERIENCE · GROUNDWATER EXPLORATION & DEVELOPMENT · AQUIFER RECHARGE · WATER QUALITY · GROUNDWATER MONITORING & REMEDIATION · GEOPHYSICAL SURVEYS · GEOCHEMICAL EXPLORATION

EDUCATION:

Post Doctoral (Hydrochemistry), University of Sevilla, 1969

Doctor of Science (Chemistry), University of Habana, 1965

Bachelor of Science (Geology and Geophysics) Massachusetts Institute of Technology, 1963

PROFESSIONAL REGISTRATION:

Geologist: State of Arkansas No. 1526, 1990

Applied Hydrogeology: E.S.T.I.M., Spain, 1967

PROFESSIONAL ACTIVITIES:

100+ international/national publications on geology, geophysics, geochemistry and groundwater

Key note speaker and invited presenter in 12 international meetings

Short courses including:

Groundwater Recharge Polytechnic University (Barcelona, Spain)

International Groundwater Congress – 2000 (Brazil)

IAH-ALHSUD Congress – 1995 (Chile)

PROFESSIONAL SOCIETIES & COMMITTEES:

Member of 12 International/national professional Societies and Committees

Chairman of the Standard Guidelines for Managed Aquifer Recharge

PROFESSIONAL EXPERIENCE:

HydroSystems, Inc., Phoenix, Arizona — 2008 to Present

Senior Hydrogeologist: Performs project management, Client service and Agency coordination for both large and small scale projects. Provides technical guidance in the areas of recharge planning, conceptual recharge facility design, environmental permitting, facility operations and system evaluations. Performs geologic and geophysical evaluations using advance methods for well siting. Is a National and International leader in the areas of artificial recharge, geology and geophysics. Performs water quality and geochemical analyses for groundwater and blended water sources.

SPECIFIC PROJECT EXPERIENCE:

- ***Walton Development and Management – Silver Reef:*** Performed project manager oversight for the development of a recharge feasibility study for a planned development in Pinal County to determine optimum locations and methodologies for recharging wastewater. Available existing data was summarized including: lithologic data and well drillers' logs, geologic reports, water level data, soils data, and well capacities. Data deficiencies and needs were identified and documented. Preliminary recharge alternatives were presented and permit requirements and needs for an Underground Storage Facility and Aquifer Protection Permits were outlined as a part of the study.

- **City of Scottsdale Water Campus:** Served as project manager for the evaluation of 10 years worth of performance data on the 27 standard vadose zone recharge wells at the Water Campus. Based on the performance of these wells, a rate of plugging was determined for the purpose of estimating of the number of new wells that would be needed as a result of the next plant expansion. A review of the internal piping was also performed on the 28 emergency vadose zone recharge wells resulting a design recommendation to allow the emergency wells to become part of the normal recharge operating system. A conceptual design document was developed documenting all of the information developed in this phase of the project.

- **Salt River Project (SRP):** Provided technical direction and guidance in all aspects of groundwater work including but not limited to groundwater exploration, monitoring and development, application of geophysical and geochemical techniques, groundwater and soil contamination studies and planning, designing, permitting, construction and operation of groundwater recharge facilities. As project manager for the Granite Reef underground Storage Project (GRUSP) and the New River Agua Fria Underground Storage Project (NAUSP) was responsible from site selection to operation of these large spreading recharge facilities. Developed the SRP well recharge program and tested a wellhead treatment system to recharge raw irrigation canal water. This treatment system that consisted of filtration and disinfection by ozonation was developed jointly with the Industrial Technology Department at Arizona State University. In charge of developing the groundwater supply for SRP's Fence Lake Coal Mine in New Mexico and supported all the environmental aspects pertinent to the development of its water resources.

Mario R. Lluria

40+ YEARS OF EXPERIENCE · GROUNDWATER EXPLORATION & DEVELOPMENT · AQUIFER RECHARGE · WATER QUALITY · GROUNDWATER MONITORING & REMEDIATION · GEOPHYSICAL SURVEYS · GEOCHEMICAL EXPLORATION

OTHER WORK EXPERIENCE:

Boyle Engineering Company 1986-1987

Senior Project Hydrologist: Project management and technical direction of groundwater recharge projects. Served as consultant for the City of Scottsdale groundwater recharge master plan and directed the preparation of the city's proposal for the High Plains Groundwater Demonstration Act Grant. Part of this work was used later for the development of the very successful Water Campus treatment-managed aquifer recharge Facility

Cella Barr Associates 1984-1986

Senior Project Hydrologist: Provided project management and technical direction to a large number of groundwater projects which included water supply to new developments, municipalities and industry, carried out soil and groundwater contamination studies and geotechnical support for engineering studies. Was project manager for the City of Phoenix Cave Creek Recharge Project which was the first ASR well in Arizona. This was the pioneer of the municipal recharge facilities in Arizona. A very successful pilot test was performed which demonstrated the feasibility of recharge by injection in the alluvial aquifer system of the Salt River Valley groundwater basin using treated water. It also proved that existing production wells can be converted to dual purpose wells (recharge/recovery) for a small capital investment.

Exxon Company, USA 1969-1984

Professional Geologist, Senior Geologist: Exploration for mineral deposits in the southeast, southwest, northwest and mid-continent regions of the United States. Exploration as for porphyry copper deposits, massive sulphide deposits, carbonate hosted deposits, detachment fault gold deposits, volcanogenic gold deposits and uranium deposits. Was a project geologist for the discovery of two world class deposits: The Cumberland zinc deposit in Tennessee and the Crandon deposit in Wisconsin. Was in charge of research and the development of a hydrogeochemical technique that was very successful in the discovery of deeply buried metallic ore deposits in several types of geologic settings.

Geotecnica, S.A. Madrid Spain 1965-1969

Manager, Senior Geologist: In charge of regional office of a geologic-engineering consulting firm that carried out mining exploration, geological engineering and geochemical services. Installed the first private geochemical exploration laboratory in Spain. Mapped and drilled tested metallic mineral targets. Was in charge of a well recharge project to control sea water intrusion in a coastal area.

HSI HydroSystems Inc.

- **Global Water Resources On Call Services:** Client considered development of a regional water and wastewater master plan for a roughly 300 square mile area around Maricopa, Arizona. Ms. La Mascus prepared for and attended numerous vision casting meetings both in-house and with the client and the client's other sub-contractors.

- **Global Water Resources Hassayampa Utilities Company Recharge Evaluation & Permitting:** Project Manager for a hydrogeologic investigation that examined the feasibility of recharging treated water in the setback of the water reclamation facility (WRF) and that supported an APP application. Three soil bores were drilled at the WRF site; one of the bores was cased to serve as a monitoring well. Permitting assistance was provided to McBride Engineering for the APP application and an AZPDES permit.

OTHER WORK EXPERIENCE:

Arizona Department of Environmental Quality, Phoenix, Arizona 2001-2005

Total Maximum Daily Load Supervisor: Supervised the State of Arizona's Total Maximum Daily Load (TMDL) program. Reviewed all documents supporting TMDL investigations including work plans, sampling and analysis plans, and contract solicitations. Coordinated public notice and meetings in support of TMDL Unit activities. Assisted with development of State's bi-annual 303(d) List and TMDL schedule. Developed yearly work plans to implement the TMDL schedule. Expanded and improved the Request for Proposals document that created a short list of contractors who could perform activities supporting Sections 303, 304, and 305 of the Clean Water Act. Co-authored and edited grant proposals for funding that support the TMDL program.

City of Farmington, New Mexico 1999-2001

Water Technician: Coordinated the San Juan River Basin adjudication suit for the City. Served as Steering Committee member for the San Juan River Basin Recovery Implementation Program. Served as City's representative in the Navajo Dam Reoperation Cooperating Agency Group. Started an enterprise GIS that included water rights, water resources, and E-911 applications; interfaced with the City's electric utility GIS; included AM/FM and pavement management applications. Evaluated Global Positioning Systems and equipment to support GIS. Lead the effort to make the City's photogrammerty "GIS ready".

Orange County Water District, California 1989–1999

Hydrogeologist: Hired, trained, and supervised the technical and administrative staff that supported WRMS. Developed WRMS database structure, reports, and data collection and handling procedures. Managed hydrogeologic data acquired from state and local agencies for the Santa Ana River and San Gabriel River watersheds and the Orange County and Los Angeles County groundwater basins. Represented OCWD on the Technical Advisory Committee for the City of Anaheim's "Comprehensive Groundwater Protection CO-OP". Contributed to the Orange County Regional Water Reclamation Project Final Feasibility Study Report, March 1995. Acted as a member of the Santa Ana River Water Quality and Health Effects Study Team.

C. Nancy La Mascus

20+ YEARS OF EXPERIENCE · PERMITTING · WATER POLICY · PLANNING · GROUNDWATER & SURFACE WATER TESTING & INVESTIGATIONS · WATER RESOURCES MANAGEMENT SYSTEM DESIGN, DEVELOPMENT, IMPLEMENTATION · WELL DRILLING & CONSTRUCTION

EDUCATION:

Bachelor of Science (Geological Sciences), California State Polytechnic University, 1990

PROFESSIONAL REGISTRATION:

Geologist: State of Arizona, No. 42443, 2005

Geologist: State of California, No. 6491, 1996

PROFESSIONAL ACTIVITIES:

Co-Founder, Four Corners GIS Users Group

2003, TMDLs of Arizona, TMDL Overview, Presented to the Inter-tribal Council

CLASSES & SEMINARS:

National TMDL Science and Policy 2002 Conference

The Groundwater Foundation's 14th Annual Fall Symposium, 1998 (San Antonio, TX)

Leadership Conferences

Leadership Training Resource Associates Corp, 2007 (Phoenix, AZ)

COMPUTER SKILLS:

Microsoft Office including Access & MS Project

ESRI Software

Autodesk Software

Golden Software

Oracle

Other programs related to: imagery compression, document management systems, LIMS', & various surface water & groundwater models

PROFESSIONAL EXPERIENCE:

HydroSystems, Inc., Phoenix, Arizona — 2005 to Present

Senior Hydrogeologist: Provides the team and clients with valuable experience in a wide-range of groundwater and surface water issues concerning Arizona and the southwest. Current focus is on performing hydrogeologic investigations, preparing reports, and obtaining environmental permits. Office tasks include project scoping, budgeting, scheduling, and management; historic records research; data analysis; report writing; responding to client and agency questions and comments; documentation; and, internal process improvement.

SPECIFIC PROJECT EXPERIENCE:

- **Town of Cave Creek Sanitary Sewer System Expansion Permitting:** Project Manager for a hydrogeologic investigation that supported an APP application for a new waste water treatment plant. Provided permitting assistance to Burns & McDonnell Engineering Company, Inc. for two AZPDES permits. Performed extensive data collection. Two sites in two different groundwater basins were examined as recharge sites; one site is adjacent to a landfill that has groundwater contamination. Reuse and surface water discharge were selected as the primary means of disposal. Used an in-house streamflow routing model to estimate impacts to Cave Creek and two tributaries.

- **Global Water Resources Palo Verde Utilities Company Campus 1 Recharge APP:** Project Manager for a hydrogeologic investigation that examined the feasibility of recharging treated water at five different sites. A hydrogeologic report for an APP application was prepared and one monitoring well was drilled and constructed in support of the APP application.

- **Global Water Resources Palo Verde Utilities Company Campus 2 Recharge Evaluation & Permitting:** Project Manager for a hydrogeologic investigation that examined the feasibility of recharging treated water in the setback of the WRF and that supported an APP application. Three soil bores were drilled at the WRF site; one was made into a monitoring well. An addendum to the APP was prepared when a second site several miles away was considered a better location for recharge. One monitoring well was drilled and installed at the second site. USF and WS permit applications for a deep injection project were prepared for the second site. Later, USF and WS permit applications were prepared for a deep injection project planned for the first site. Permitting assistance was provided to McBride Engineering for the APP application, the APP addendum, and an AZPDES permit

- **The Reserve Physical Availability Demonstration:** Assisted with the preparation of a hydrogeologic study that demonstrated the physical availability of a 100-year water supply needed to serve the Riverview Service Area per Arizona Department of Water Resources requirements.

Brandon J. McLean

3+ YEARS OF EXPERIENCE · WATER RESOURCE DEVELOPMENT · GROUNDWATER RECHARGE · WATER QUALITY/GEOCHEMICAL ANALYSIS

GEOLOGIC ASSESSMENTS

- **Town of Gilbert:** Assisted Project Manager in the field during aquifer testing and groundwater sampling and in the office with the report writing, tables, and graphics.
- **City of Surprise:** Provided field oversight during drilling and construction of five vadose zone recharge wells.
- **Service Processing Center, El Centro, California:** Provided a water quality evaluation of the potable water distribution system and offered rehabilitation solutions to remove pipeline scale.

OTHER WORK EXPERIENCE:

AMEC Earth & Environmental, Tempe, Arizona 2006

Field Assistant/Internship, Environmental Division: Located dry wells in City of Scottsdale for impact assessment. (80Hr)

Clear Creek & Associates, Scottsdale, Arizona 2006

Internship: Observed well construction, drilling, design, and rehabilitation. (80Hr)

Arizona Department of Environmental Quality, Phoenix, Arizona 2006

Internship, Total Maximum Daily Loads Unit: Collected surface water quality samples including Mercury. (120Hr)

Arizona State University, Tempe, Arizona 2004-2007

Teacher Assistant: Instructed three sections of undergraduate geology lab course per semester.

Research Assistant: When not performing duties as a Teacher Assistant, conducted research under the guidance of an adviser for Master Degree Program.

Brandon J. McLean

3+ YEARS OF EXPERIENCE · WATER RESOURCE DEVELOPMENT · GROUNDWATER RECHARGE · WATER QUALITY/GEOCHEMICAL ANALYSIS

GEOLOGIC ASSESSMENTS

EDUCATION:

Master of Science (Geology), Arizona State University, 2007

Bachelor of Science (Geology), SUNY Binghamton, 2004

PROFESSIONAL REGISTRATION:

G.I.T. State of Arizona, 2008

PROFESSIONAL SOCIETIES & COMMITTEES:

Member, National Ground Water Association

Member, 40 Hour Hazardous Waste Operations and Emergency Response

Member, American Geophysical Union

CLASSES & SEMINARS:

National Ground Water Association Conference, 2008

Water Well Performance Workshop, 2008

40 Hour Hazardous Waste Operations and Emergency Response Conference, 2006

American Geophysical Union Conference, 2006

Geological Society of America Conference, 2005

LEADERSHIP CONFERENCES

Leadership Training Resource Associates Corp, 2008 (Phoenix, AZ)

COMPUTER SKILLS:

ArcGIS

AquaChem, EQ3/6, PHREEQC

THwells, GMS, MODFLOW

WellCAD

Microsoft Office, Adobe

AWARDS:

Arizona Hydrological Society Intern Scholarship, 2006

PROFESSIONAL EXPERIENCE:

HydroSystems, Inc., Phoenix, Arizona — 2007 to Present

Hydrologist I: Provides professional support both in the field and in the office on a variety of projects with expertise in aqueous geochemistry. Field work includes groundwater sampling, aquifer tests, and geologic logging. Office work includes report writing, database management, scope and fee development, and data evaluation and interpretation.

SPECIFIC PROJECT EXPERIENCE:

- **Salt River Pima-Maricopa Indian Community:** Developed and executed a well test plan to evaluate the possibility of lowering arsenic levels in a water supply well to comply with drinking water standards through well modifications. The testing included a short aquifer test, geophysical logging, and depth discrete groundwater sampling.
- **City of Glendale:** Developed the hydrogeologic assessment in support of an the Aquifer Protection Permit (APP) modification to expand recharge at the Arrowhead Ranch Water Reclamation Facility. The report covered a description of regional and local geology, groundwater chemistry, and hydrology as well as a model of the recharge mound.
- **Lake Havasu City:** Used ambient groundwater quality data to calculate the Alert Levels and Aquifer Water Quality Standards to conform with the APP at two recharge facilities. Provided field oversight during the injection testing of one vadose zone well and evaluated additional injection test data for use in attaining a Significant Amendment to the APP.
- **Gila River Indian Community:** Provided field oversight for the construction and testing of 2 large diameter production wells. Developed a scope and fee for one well. Other field activities included zonal and new source groundwater sampling, borehole geologic logging and sieve analysis, and geophysical log interpretation.
- **City of Tempe:** Provided professional consultation for CWC Engineering including field oversight during the abandonment of two monitor wells, two piezometer wells, and two recovery wells. Also provided oversight during the drilling, construction and development of two replacement recovery wells and conducted short pump tests to verify the wells met or exceeded old well performance.
- **City of Flagstaff:** Assisted the Project Manager with the completion report of two water wells by evaluating and characterizing regional groundwater quality and comparing to well water to estimate groundwater source and movement.
- **Arizona Department of Emergency & Military Affairs:** Provided field oversight during drilling and construction of a fractured rock well near the White Tank Mountains in Buckeye, Arizona which utilized CSAMT data for the well design following drilling of the borehole.

HSI HydroSystems, Inc.

Miles McGinnis

8+ YEARS OF EXPERIENCE · AQUIFER TESTING · WELL DRILLING AND CONSTRUCTION OVERSIGHT · FIELD EQUIPMENT AND SUPPLIES MAINTENANCE

PROFESSIONAL SKILLS:

Administration, maintenance and repair of field equipment and supplies

Oversight of field activities including: well drilling, water quality sampling, pump testing, aquifer testing

CLASSES & SEMINARS:

AutoCAD Level I&II

LEADERSHIP CONFERENCES

Leadership Training Resource Associates Corp, 2008 (Phoenix, AZ)

COMPUTER SKILLS:

AutoCAD

Microsoft Office

GIS

PROFESSIONAL EXPERIENCE:

HydroSystems, Inc., Phoenix, Arizona — 2001 to Present

Field Hydrologist: Responsible for maintaining all field equipment including sounders, transducers, data loggers and field supplies. Head field technician during drilling, pump tests, and aquifer tests. Assists in collecting water samples for water quality testing. Responsible for the figure preparation generated in AutoCAD and/or GIS for client reports or permits.

SPECIFIC PROJECT EXPERIENCE:

- **SunMP:** Project field technician for the well field owned by SunMP for the Estrella Mountain Ranch development. GIS Technician responsible for putting together an interactive map to allow for quick visual analysis. The well field includes production wells, injection wells, and wells that will be abandoned. Mr. McGinnis is responsible for all field activity the project requires.
- **Lake Havasu City:** Field technician for the well fields owned by Lake Havasu City. Mr. McGinnis has taken a lead field role in the installation and start up of the North Plant Recharge Facilities Vadose Zone Well Field.
- **MBT Ranch O&M:** Assisted in the day-to-day operation of the underground storage facility permitted for basin and vadose zone recharge.
- **Fountain Hills Sanitary District:** Assisted in the testing and data collection activities for the Aquifer Storage and Recovery well field including the five monitor wells.
- **Vidler Water Company, Sandy Valley & Tule Valley Production Wells:** Assisted with the field activities during the drilling and aquifer testing of productions wells in Sandy Valley and Tule Valley, Nevada.
- **City of Phoenix Cave Creek:** Participated in development of Recharge Testing Plan and managed the field activities during testing of the 7 vadose zone recharge wells.
- **Far West, Yuma, Arizona:** Lead field position in a groundwater survey collecting groundwater levels and water quality samples in and around east Yuma.
- **Show Low Bluff:** *Field Participant for a CSAMT surface geophysical well site evaluation survey which led to planning, well design, drilling, and testing, oversight.*

HSI HydroSystems, Inc.

Marla Mikaelian

13+ YEARS OF EXPERIENCE · PURCHASING · JOB COSTING · ADMINISTRATIVE · CUSTOMER SERVICE · INVOICING

EDUCATION:

Bachelor of Business Administration, University of Phoenix

Mt. San Antonio College, 1988-1991

COMPUTER SKILLS:

Microsoft Office

Integrated Programs: QuickBooks

CLASSES & SEMINARS:

Introduction to QuickBooks, 1997

Lotus 1 2 3

Conflict Management Classes

Leadership Conferences

Leadership Training Resource Associates Corp, 2007 (Phoenix, AZ)

PROFESSIONAL EXPERIENCE:

HydroSystems, Inc., Phoenix, Arizona 2002 to Present

Administrative Assistant: Responsible for the administrative activities of the firm. Provides support to clients and technical staff. Responsible for job costing, invoicing, accounting support functions, maintenance of the HSI library and purchasing.

SPECIFIC PROJECT EXPERIENCE:

- **Assets & Inventory:** Track facilities assets and field equipment inventory for cost depreciation, usage rate, and disposal.
- **Brown Bag/Special Functions Coordinator:** Coordinates all of HSI's functions to the smallest detail to ensure all activities are not only team building but cost effective for the company. Some activities include price comparison, special requests, catering, selection of location and activity, purchases of gift cards and greeting cards, and all appropriate items.
- **Coordination:** Organizes errands at the request of staff members and business manager such as bank runs, post office, permits to ADWR or ADEQ and any documents that need to be hand carried and ensures that multiples stops were made each time. If more cost effective, arranges for pickup and delivery of time sensitive packages and documents.
- **Facility's Receptionist:** Coordinates schedules of staff and field equipment for field activities, and travel arrangements. Responsible for scheduling meetings for all employees along with provides hospitality service arrangements as requested by staff.
- **Invoicing:** Coordinates and completes the client invoicing on a timely and accurate basis.
- **Library:** Purchases required project publications, books and maps. Organizes and stores in library for future reference.
- **Mail:** Organizes, sorts, and assigns mail distribution for all the employees.
- **Purchasing:** Coordinates and purchases various supplies for the office facility and field equipment.
- **Staff Meeting:** Profound ability to transcribe and record meeting minutes to keep on file for future reference.

Marla Mikaelian

13+ YEARS OF EXPERIENCE · PURCHASING · JOB COSTING · ADMINISTRATIVE · CUSTOMER SERVICE · INVOICING

OTHER WORK EXPERIENCE:

Engineered Comfort Systems, Inc. Santa Fee Springs, California 1989-1995

Administrative Assistance/Supervisor: Responsible for all levels of a project. Receive orders from sales engineers, complete and send orders to various factories. Follow up with factories on each order for lead times, shipping and delivery coordination. Liaison between factory and client. Responsible for requesting and receiving customers purchase orders, checking credit and filing applicable lien notices. Responsible for paying factory invoices and invoicing/collecting from the client. Complete job costing activities. Negotiating with client and sales engineer on project back charges.

Peggy Olsen

30+ YEARS OF EXPERIENCE · ACCOUNTING · BUDGET · ADMINISTRATIVE · CUSTOMER SERVICE · MARKETING

EDUCATION:

Bachelor of Science (Accounting), Arizona State University, 1997

Jackson Business University (Business), 1972

Western Michigan University (Study of Secondary Education & Sociology), 1969-1971

Associates of Art, Jackson Community College, 1967-1969

PROFESSIONAL SOCIETIES & COMMITTEES:

Honor Society

COMPUTER SKILLS:

Word Processing: MS-Word, MS-Excel, and WordPerfect

Integrated Programs: QuickBooks

Flow Charting: ABC Flow Charter

CLASSES & SEMINARS:

John Maxwell - Learning the 17 Indisputable Laws of Teamwork, 2005

Dartnell Skill Builder - How to make Teamwork Work, 2004

Evelyn Wood - Reading Dynamics, 2003

ACEA - Avoiding 7 Deadly Sins of Practice, 2002

Conflict Management Skills for Women, 2002

Introduction to QuickBooks & QuickBooks Pro, 1997

Advanced QuickBooks & QuickBooks Pro, 1997

Leadership Conferences

Leadership Training Resource Associates Corp, 2007 (Phoenix, AZ)

Maximum Impact - Developing the Leader within You, 2003

PROFESSIONAL EXPERIENCE:

HydroSystems, Inc., Phoenix, Arizona 1997 to Present

Business Manager: Responsible for the administrative activities of the firm. Provides support to clients and technical staff. Coordinates and facilitates the basic office operations, project budgets, and schedules. Responsible for monthly invoices, bills, company payroll, cost accounting and subcontractors agreements and payments.

SPECIFIC PROJECT EXPERIENCE:

- **Accounts Payable:** Coordinates and organizes operating, capital, project and subcontract expenses.
- **Accounts Receivable:** Coordinates and organizes monthly client invoices including timesheets, subcontractors billing, allowances, expenses and equipment usage.
- **Contracts:** Provides preliminary review and comments for project and subconsultant agreements in support of legal counsel.
- **Dashboard:** compiles, monitors, and presents a graphic display of periodic project and financial status.
- **Financial Budgets:** Creates budgets and forecasts for the company on an annual basis and presents to the principles. Prepares company accounts for reporting requirements.
- **Flow Charting:** Created the flow charts used in the organization and administration of the Fountain Hills Sanitary District Aquifer Storage and Recovery Facility in Fountain Hills, Arizona, and the Orange County Water District Well Field Project in Orange County, California.
- **HR/Benefits:** Coordinate employment opportunities, conduct interviews, and execute new hire process. Responsible for employee's compensation packages, benefits programs, handbook, compliance with labor regulations, and offers assistance to employees to promote a positive work environment.
- **IT:** Troubleshoots and provides technical support by phone and in person to the facilities staff. Coordinates the repair and maintenance of printers, monitors, scanners and hardware. Researches the most compatible software and systems on existing equipment. Leads the Server management responsibilities and implementation tasks.
- **Marketing:** Reviews and coordinates all website material and ads in hydrology magazines.
- **Payroll:** Performs bi-weekly payroll and reporting functions.
- **Purchasing:** Research, monitor and record office facility and field equipment. Liaise with bankers, insurers and solicitors regarding financial transactions.
- **Team Leader:** Leads and directs the Administrative Team through goals to increase HSI's proficiency and productivity.

HSI HydroSystems, Inc.

01/09

Peggy Olsen

30+ YEARS OF EXPERIENCE · ACCOUNTING · BUDGET · ADMINISTRATIVE · CUSTOMER SERVICE · MARKETING

OTHER WORK EXPERIENCE:

Conroy Wholesale Florist, Phoenix, Arizona 1972-1996

Office Manager: Responsible for all levels of office management related to a multi-company environment. Responsible for accounts receivable and payroll. Assisted in establishing company policies for internal controls. Aided in the development of the employee handbook. Played an integral part in customer and employee recruitment and relations. Developed advertising and marketing strategies for the company.